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The Canadian Dental Hygienists Association

PROBE

JOURNAL

de l'Association canadienne des hygiénistes dentaires

JANUARY/FEBRUARY 2001 VOL. 35 NO. 1

Our 50th Anniversary

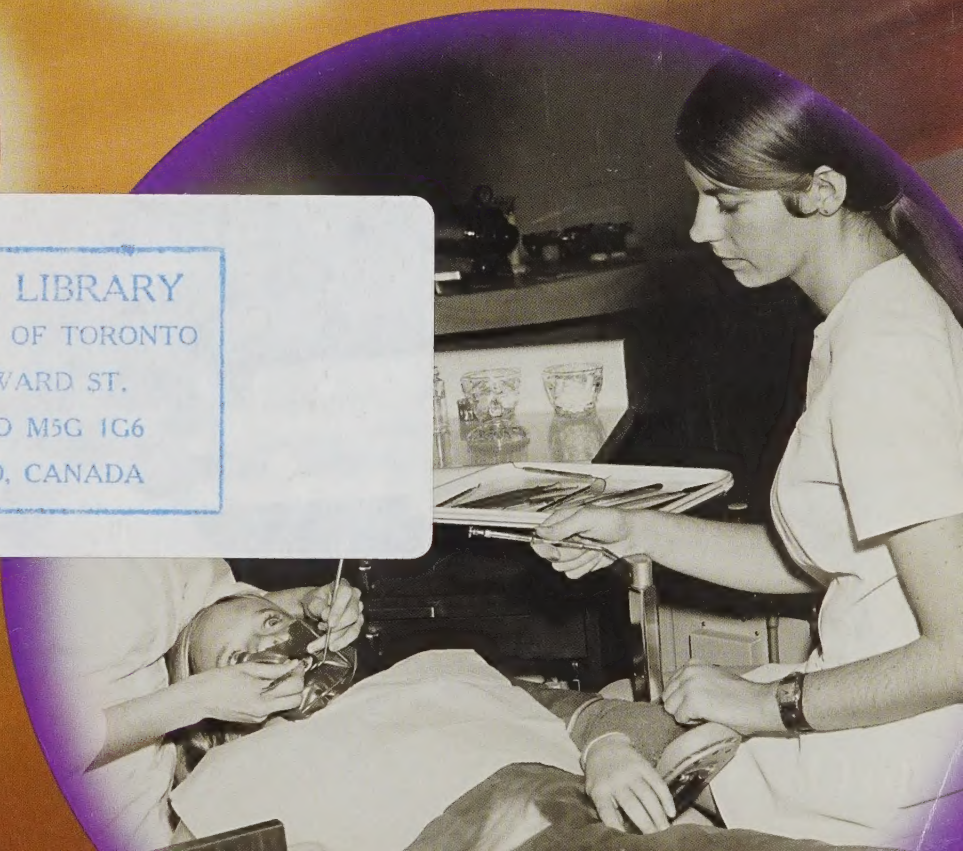
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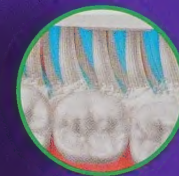
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Build Today For A Lasting Client Relationship

By Jane Waite, Dip. D.H.,
Editorial Board Member



We are all consumers of products and services everyday. What factors determine what companies get our business? In many industries, prices are comparable so companies who offer personalized service get the business. As dental hygienists, we have a great opportunity to meet the individual needs of

the client each day to bring them back for hygiene care again and again.

As dental hygienists, we are taught to do a visual assessment of our client from the first meeting in the waiting area of the dental office. We look at visual age, posture, and facial expression and by the time we guide them into the operatory, we can gauge their comfort level at being in a dental office. We are all a sum total of our past experiences.

Whether we realize it or not, it affects everything we do and how we react in different situations. We need to assess the needs of that client that day.

For many people, coming to the dental office is a very positive experience. They love getting their teeth cleaned; the smooth, clean feeling of their teeth when the cleaning is complete. They trust their dental hygienist is giving them the best care, the instruments are clean and the treatment is not going to hurt!

For others, the visit to the dental office varies from coming because they know it is the "healthy thing to do", to absolute terror and being barely able to get through the front door. Those are the clients that cancel their appointments at times because of the fear. It is a very real fear we call dental phobia. These clients need lots of TLC - tender loving care. Often clients apologize for their nervousness and are embarrassed because they are such "wimps". They need to be reassured that others feel the same way they do and be congratulated for having enough courage to get through the front door. "I'm glad you're here" attitude of acceptance and support often puts the patient at ease.

Every client should have the treatment for that day geared to how much they can handle. It may mean having them back to complete the cleaning or planning for local anesthetic for sensitive areas to keep the client comfortable. Giving clients a chance to discuss their previous dental visits can often reveal the following experiences:

1. treatment without "freezing" or before freezing took effect;
2. pain;
3. fear of the "needle" or the "drill";
4. lack of "chairside manner";
5. fear of the unknown.

As human beings, we all have the basic need to be heard and acknowledged. As dental hygienists we can all strive to do this for our clients.



Back row (L to R): Carol Matheson Worobey, Ruth Lunn and Angela Whelan. Front row (L to R): Brenda Fortune, Laura MacDonald and Jane Waite.

Nervous children need to be slowly introduced to the dental office. Often a pre-appointment visit for a tour of the office gets the children more comfortable with the physical setting. It's a chance to ask questions and maybe even touch some unfamiliar equipment. At appointment time, procedures ("what are you going to do to me?") should be explained in age appropriate terms and before the treatment begins. Keep in mind that from a child's perspective, the toy they receive at the end of the visit becomes the positive memory and the motivator for the next appointment.

As dental hygienists, we have a unique relationship with our clients. We work in such physically close proximity and, over time, get to know them as people. They share with us their celebrations and challenges of life. They tell us of family weddings, births, vacations, illnesses and deaths. We have a chance to establish a trust that communicates this is a safe, caring, and healthy place to come. Our patients are not JUST another mouth to clean. If we treat them like our parents, grandparents, siblings, children and friends, as unique individuals, we will meet their needs today and lay the foundation for a lasting dental hygiene relationship!

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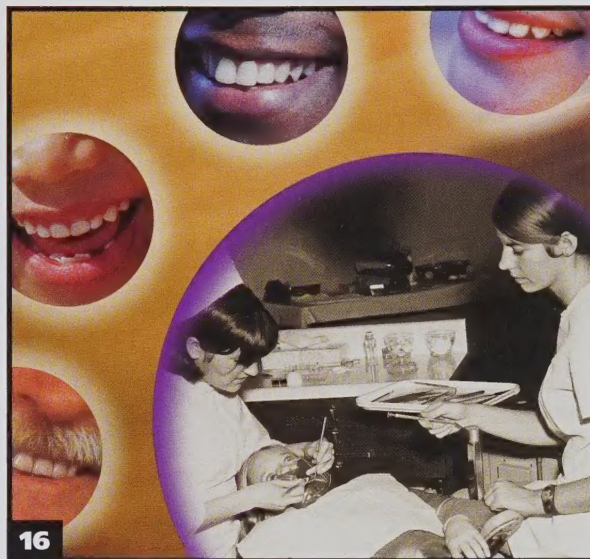
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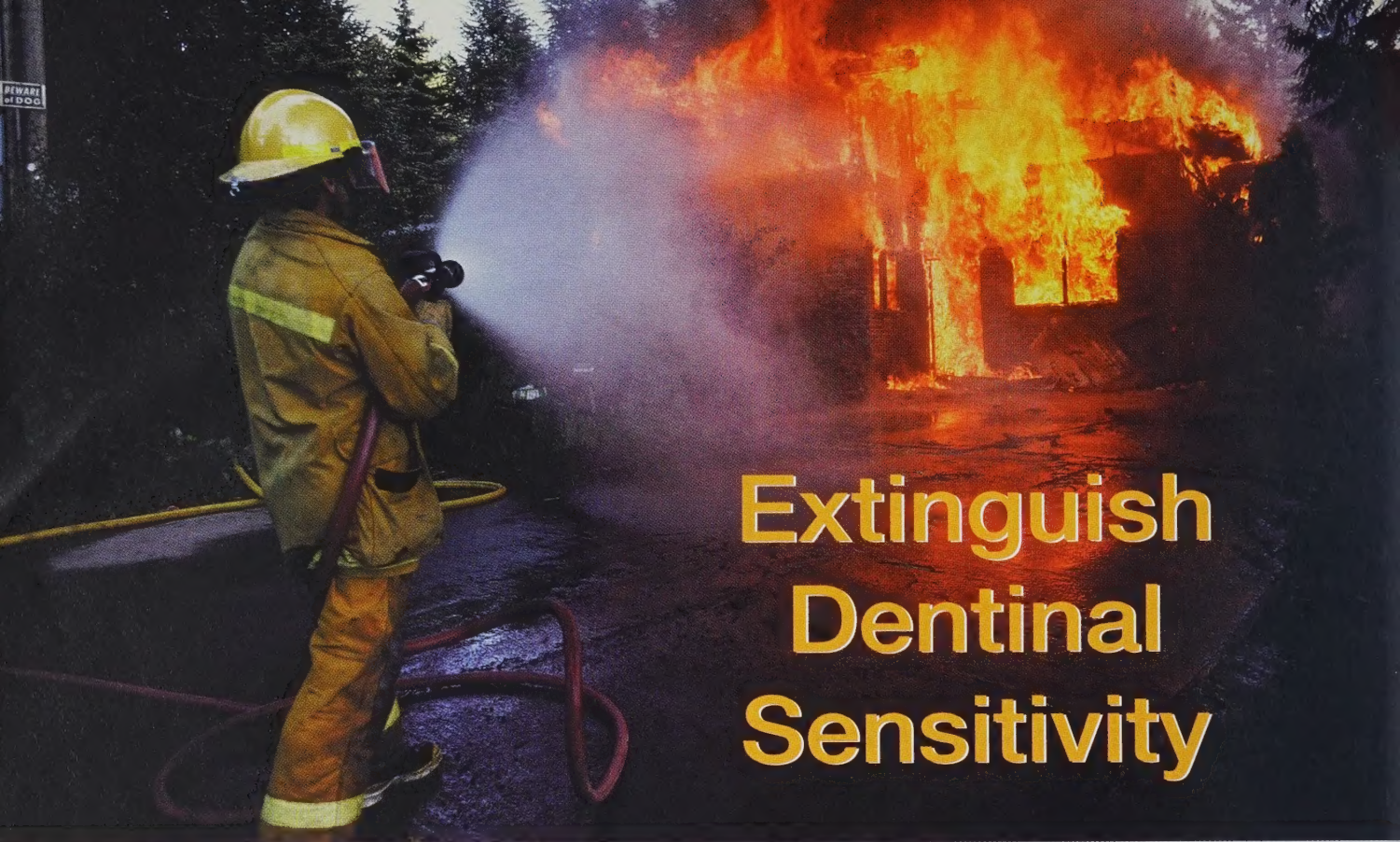
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CONTRIBUTORS:

Leanne Carlson-Mann, Dip.D.H., Dip.D.T.
Carol Barr Overholt, Dip.D.H., B.Ed.
Karen Wolf, Dip.D.H.

EDITORIAL BOARD:

B. Fortune, Dip.D.H.
R. Lunn, Dip.D.H.
L. MacDonald, Dip.D.H., B.Sc.D., M.Ed.
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DESIGN: Mike Donnelly

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CDHA's Annual Professional Conference

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1. Sharma, NC, et al. Am J Dent 1998; 11:S29-S33. 2. Ernst C-P, et al. Am J Dent 1998; 11:S13-S16. 3. Driesen GM, et al. Am J Dent 1998; 11:S7-S11. 4. Cronin M, et al., Am J Dent 1998; 11:S17-S21. 5. Van der Weijden GA, et al. Am J Dent 1998; 11:S23-S28.

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PRESIDENT'S MESSAGE

LE MESSAGE DE LA PRÉSIDENTE

Who moved my Cheese? Qui a déplacé mon fromage ?

Coping with change

By Salme Lavigne, RDH, BA, MS(DH)

New Year's greetings to all of you! We are now officially in the new millennium as the numbers turned to the year "01" and also officially in our 50th year of Dental Hygiene in Canada! Along with this new age, I am sure that we will be in store for a lot of unimaginable changes. Just think of our grandparents who were born at the turn of the 20th century. Who could have fathomed in the year 1901 that man would not only be driving around in motorized vehicles, but routinely flying around the world to conduct business and astronauts would reach the moon, all during their lifetime! That, along with the advent and advances of the computer age, would have been enough to mind boggle any respectable citizen of the world just 100 years ago!

With this in mind, I look towards this century with both excitement and trepidation. I believe that the world is in store for many more changes than our grandparents faced in the last century. Taking these thoughts into our own backyards, our profession will undergo numerous changes over the next several years. Coping with change is handled by individuals in many different ways. Some of us thrive on change while others find the smallest deviation in routine very difficult.

WHO MOVED MY CHEESE? ...continued on page 10

Salme Lavigne received her Diploma in Dental Hygiene from the University of Toronto, her Baccalaureate degree in Biomedical Anthropology from Lakehead University, a certificate in Periodontal Therapy from Northern Arizona University and her Master of Science degree in Dental Hygiene Education from the University of Missouri-Kansas City. Salme has extensive experience in both private practice and in dental hygiene education in both Canada and the US. She is currently Director of the School of Dental Hygiene at the Faculty of Dentistry, University of Manitoba. Her main interests are in periodontics and local anesthesia.



L'adaptation au changement

Par Salme Lavigne, H.D., BA, M.Sc.(H.D.)

Salutations du Nouvel An à vous toutes et à vous tous! Nous sommes maintenant officiellement entrés dans le nouveau millénaire, au moment où les pendules afficheront l'année "01". Avec ce nouvel âge, je suis sûre qu'une quantité inimaginable de changements nous attendent. Pensons seulement à nos grands-parents, nés au tournant du 20^e siècle. Qui aurait pu, en 1901, avoir imaginé qu'en plus de se promener dans des véhicules motorisés, l'homme voyagerait dans les airs autour du globe pour ses affaires sans même

y penser et que les astronautes se rendraient sur la lune, tout cela pendant le cours de leur vie! Ces inventions, ainsi que l'avènement et les progrès de l'ère de l'ordinateur, auraient suffi à établir tout citoyen respectable du monde il y a à peine 100 ans!

Avec cette image en tête, je regarde vers ce siècle avec excitation et de trépidation. Je crois que le monde nous réserve beaucoup plus de changements que ce qu'ont pu vivre nos grands-parents au siècle dernier. Si nous reprenons ces idées à notre propre compte, notre profession subira de nombreux changements au cours des années à venir. Les personnes ont toutes des façons différentes de s'accommoder au changement. Certains d'entre nous vont prospérer avec le changement tandis que d'autres trouveront très difficile le moindre écart les éloignant de leurs activités routinières.

Les changements qui se produiront dans le domaine de l'hygiène dentaire au cours du prochain siècle sont relativement prévisibles et ne laissent que peu de part à l'imagination. De nombreuses forces échappant à notre contrôle font avancer notre profession dans une direction qui peut ne pas toujours être dans nos meilleurs intérêts. La capacité du grand public d'avoir accès à un monde d'information, directement de chez eux, concernant n'importe quelle question de santé qu'ils choisissent d'explorer permettra à tous d'avoir accès à des renseignements de dépistage en matière de santé, y compris des options de diagnostic et de traitement. Les sociétés pharmaceutiques s'affairent déjà à la promotion de leurs trousseaux de dépistage à domicile pour la détection hâtive d'une variété de conditions de santé à l'aide de tests de salive faciles d'utilisation.

QUI A DÉPLACÉ MON FROMAGE ? ...suite à la page 10

The changes that will occur in dental hygiene in the next century are somewhat predictable and do not leave much for the imagination. Many forces beyond our control are moving our very profession in a direction that may not always be in our best interest. The ability of the general public to access a world of information in their own homes about any health matter they choose to explore will enable them to access health screening information, including diagnostic and treatment options. Drug companies are already busy marketing home screening kits for the early detection of a variety of conditions utilizing easy to use saliva testing. Vaccines are already being explored for the elimination of caries. Perhaps periodontal vaccines will be the next to be developed!

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The movement of dentistry away from a health profession to an industry of esthetics has already begun. Dentistry has taken advantage of the demand for better appearance through tooth bleaching, esthetic resins and even plastic surgery! If you are into surfing the web, look under "The SmileOasis Spa®" at http://www.dentalduplex.com/smileoasis_spa.html which is located in Manhattan, offering everything from an Ayurvedic Lip Exfoliation to Coffee-Break Cleanings and plastic surgery! With all this in mind, what will become of dental hygiene?

In the last *Explorer* (November/December 2000, number 2), I posed a question to all of you regarding professionalization and the clear need for change in our educational credential in order to be prepared for the future. I am happy to report that your Board, at the October Board meeting, took a very proactive stance and passed a resolution developing a policy that states "By the year 2005, all students entering dental hygiene programs will require a baccalaureate degree as the credential for entry to practice". This is truly a very exciting time for dental hygiene. However, it is also clearly a time of change.

Best selling author Spencer Johnson M.D. in his book, "Who moved my Cheese?", reveals profound truths about change. It is an amusing story about four characters who live in a "maze" and look for "cheese" to nourish them and make them happy. The characters consist of two mice named Sniff and Scurry and two "little people" named Hem and Haw. "Cheese" is essentially a metaphor for what you want in life, consider it your career or your job. The "Maze" is where you look for what you want or simply, where you work. In the story, the characters face some unexpected change (ie. their cheese has been moved). The mice are portrayed as being very proactive and simply had already prepared themselves for the change, whereas the humans had not. "Haw" after mourning his loss, eventually develops a strategy for change whereas "Hem" refuses to adapt to the change and gets left behind. In the attempt to persuade Hem to move forward, Haw develops "The Handwriting on the Wall". Perhaps his words of wisdom will help you to cope with the changes our profession is about to face:

On explore déjà des vaccins qui élimineraient les caries. Peut-être des vaccins périodontaux seront-ils les prochains à être développés!

Le mouvement de l'art dentaire, qui s'éloigne des professions de la santé pour aller vers l'industrie de l'esthétique, est déjà commencé. La dentisterie a profité de la demande pour une meilleure apparence au moyen du blanchiment des dents, de résines esthétiques et même de chirurgie plastique ! Si vous naviguez sur le web, rendez visite au site "The SmileOasis Spa®", à l'adresse http://www.dentalduplex.com/smileoasis_spa.html, situé à Manhattan, un site qui offre de tout. Avec tout ce que le site offre, qu'en adviendra-t-il de l'hygiène dentaire ?

Dans le dernier *Explorer* (novembre/décembre 2000, numéro 2), je vous ai posé une question à tous concernant la professionnalisation et le clair besoin de changement dans le contenu de nos études de façon à se préparer pour l'avenir. Je suis heureuse de rapporter que notre Conseil, à sa réunion d'octobre, a pris une position très proactive et adopté une résolution visant à l'élaboration d'une politique selon laquelle : "D'ici l'année 2005, tous les étudiants entreprenant des programmes d'hygiène dentaire devront posséder un diplôme de baccalauréat comme accréditation permettant d'accéder à la pratique! C'est vraiment un temps excitant pour l'hygiène dentaire. Toutefois, c'est également un temps de changement.

Dans son livre "Who moved my cheese", l'auteur à succès Spencer Johnson M.D., révèle de profondes vérités concernant le changement. C'est une histoire amusante de quatre personnages qui vivent dans un "labyrinthe" et qui cherchent du "fromage" pour se nourrir et être heureux. Il s'agit de deux souris appelées Sniff et Scurry, et de deux "petits personnages" nommés Hem et Haw. Le "fromage" est essentiellement une métaphore représentant ce que vous attendez de la vie, votre carrière ou votre travail. Le "labyrinthe", c'est là où vous cherchez ce que vous voulez ou simplement, là où vous travaillez. Dans l'histoire, les personnages font face à un changement inattendu (c.-à-d., leur fromage a été déplacé). Les souris sont dépeintes comme étant très proactives; elles s'étaient simplement préparées au changement, alors que ce n'était pas le cas des humains. "Haw", après avoir pleuré sa perte, développe éventuellement une stratégie pour faire face au changement tandis que "Hem" refuse de s'adapter au changement et reste à l'arrière. Dans ses tentatives de persuader Hem d'aller de l'avant, Haw développe "L'écriture sur le mur". Peut-être ses sages paroles vous aideront-elles à vous accommoder aux changements qui se produiront bientôt dans notre profession.

The Handwriting on the Wall

CHANGE HAPPENS

They keep moving the cheese

ANTICIPATE CHANGE

Get ready for the cheese to move

MONITOR CHANGE

*Smell the cheese often
so you know when its getting old*

CHANGE

*The quicker you let go of old cheese,
the sooner you can enjoy new cheese*

ENJOY CHANGE

*Savour the adventure and enjoy
the taste of new cheese*

*Be ready to change quickly and enjoy it
again and again
They keep moving the cheese!*

Les mots sur le mur

LE CHANGEMENT EST UNE CHOSE QUI ARRIVE

Ils continuent à déplacer le fromage

ATTENDEZ-VOUS AU CHANGEMENT

Soyez prêts à ce que le fromage soit déplacé

SUIVEZ LE CHANGEMENT

*Sentez le fromage souvent pour
savoir quand il vieillit*

LE CHANGEMENT

*Plus tôt vous laissez aller le vieux fromage,
plus tôt vous pourrez goûter le nouveau*

SAVOUREZ LE CHANGEMENT

Savourez l'aventure et le goût du nouveau fromage

*Soyez prêt à changer rapidement et à
constamment goûter le changement
Ils ne cessent pas de déplacer le fromage !*

11

I am excited to share with you another change in the CDHA. I ask you to welcome our new Executive Director, Susan A. Ziebarth. She comes to CDHA with many years of executive director experience and a Master's Degree in Health Administration. With her knowledge of the health care system and her experience with moving organizations forward, I know that she is the right person to help us to "Move our own cheese"!

Je suis heureuse de partager avec vous un autre changement à l'ACHD. Je vous demande d'accueillir notre nouvelle directrice générale, Susan A. Ziebarth. Elle arrive à l'ACHD avec plusieurs années d'expériences comme directrice générale et une maîtrise en administration de la santé. Avec ses connaissances du système de la santé et son expérience à faire avancer les organisations, je sais qu'elle est la personne qu'il faut pour nous aider à "Déplacer notre propre fromage" !

Canadian Dental Hygienists Association (CDHA) appoints new Executive Director

The Canadian Dental Hygienists Association (CDHA) is pleased to announce the appointment of Ms. Susan A. Ziebarth, to the position of Executive Director for its National Office.

Ms. Ziebarth has extensive experience in management, health promotion, and working with not-for-profit associations. Her background in health sciences, policy governance expertise, program planning and government and public relations experience are strong assets for CDHA's leadership.

Since 1995, Ms. Ziebarth has been the Executive Director for the Parkinson's Society of Ottawa-Carleton. As the Executive Director, she established sound financial and human resource management practices, created a marketing



Susan A. Ziebarth
CDHA, Executive Director

and funds development program and represented the organization with the media, key contacts and other associations.

Previously, Ms. Ziebarth worked as the Education Director with the National Canadian Lung Association and advocated for lung health issues through legislative change and government initiatives and created public awareness campaigns in the area of lung health and air quality.

With an Honors Bachelor of Science from the University of Waterloo in Health Studies and a Masters of Health Administration from the University of Ottawa, Ms. Ziebarth has also found time to create and maintain an editing and publishing company specializing in health management oriented publications. "The CDHA Board of Directors is delighted to have Ms. Ziebarth accept the position of Executive Director", commented Salme Lavigne, President of CDHA.

Highlights of CDHA's Board of Directors October 2000 Meeting

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Back row left to right: Karen Wolf, Susanne Sunnell, Chantal Normand, Dianne Stojak, Angie Yarnton, Charlene Hamill, Patti Wickstrom, Patti Sinnott-Curran, Natasha Kravtsov. Front row: Barb Gibb, Donna Bowes, Lynda McKeown, Salme Lavigne, Kathleen Trites, Cindy Holden.

The Canadian Dental Hygienists Association's (CDHA) Board of Directors Inaugural Session took place in Ottawa, October 13-15th, 2000. The Board of Directors, with the guidance of facilitator Carolyn Everson, carefully reviewed CDHA's end policies and addressed future strategic planning for the Association.



Presentation to ADHA on B.Sc. DH program.

HIGHLIGHTS FROM THE MEETING INCLUDE:

- Salme Lavigne accepts gavel as CDHA's President;
- Barbara Gibb, CDHA Board of Director representing the province of Ontario was acclaimed as CDHA President-Elect;
- The CDHA mission statement was amended. The CDHA mission statement now reads as follows: *"The Canadian Dental Hygienists Association (CDHA), as the collective voice and vision of dental hygiene in Canada, advances the profession in support of our members and contributes to the health and well-being of the public";*
- The next CDHA Annual Professional Conference 2002 will be held in Moncton, New Brunswick;
- Policy Framework for Dental Hygiene Education in Canada become effective in 2005 so that a Baccalaureate Degree in Dental Hygiene be the required credential for entry to dental hygiene practice for all new students commencing in the year 2005;
- The appointment of a Junior CDHA Representative to the International Federation of Dental Hygienists (IFDH) was approved. Patty Wickstrom was appointed.

- Appointment of Susan A. Ziebarth was accepted as the new CDHA Executive Director.

The next Board of Directors Meeting will take place on March 22-25, 2001. To forward your views on any of these issues or if you have any questions or comments, please forward to:

Canadian Dental Hygienists Association
96 Centrepointhe Drive, Ottawa, Ontario K2G 6B1
Telephone: (613) 224-5515 Fax: (613) 224-7283
E-mail: info@cdha.ca



**THE CANADIAN DENTAL
HYGIENISTS ASSOCIATION**
**L'ASSOCIATION CANADIENNE
DES HYGIÉNISTES DENTAIRE**



Donna presents Lynda with bound "Presidents' Messages".

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Outgoing Board of Directors: Patti Sinnott-Curran, Susanne Sunnell, Dianne Stojak, Donna Bowes, Natasha Kravtsov.

CDHA BOARD OF DIRECTORS 2000

Lynda McKeown	President
Salme Lavigne	President Elect
Donna Bowes	Past President
Dianne Stojak	British Columbia
Patti Wickstrom	Alberta
Angie Yarnton	Saskatchewan
Natasha Kravtsov	Manitoba
Barb Gibb	Ontario
Chantal Normand	Québec
Karen Wolf	Nova Scotia
Kathleen Trites	New Brunswick
Cindy Holden	Newfoundland
Patti Sinnott-Curran	Prince Edward Island
Susanne Sunnell	Dental Hygiene Educators Canada
Charlene Hamill	Dental Hygiene Regulatory Authorities



Lynda passes the presidents' pin to Salme.

National Dental Hygiene Week™ 2000 Update

National Dental Hygiene Week™ (NDHW™) took place from October 15 to 21, 2000. This year, NDHW™ focused on dental hygienists' vast scope of work. We wanted Canadians to know we do more than just clean teeth – we play a very important role in the maintenance of overall health.



The Week featured a number of promotional activities at the national level:

- The dental hygiene profession was promoted with **advertisements** in Canada's two premiere news magazines, *Maclean's* (October 16th issue) and *L'actualité* (October 15th issue). The ads reached millions of Canadians.
- A **hotlink**, posted on the Home Page of the *Maclean's* Web site for more than two weeks, attracted thousands of Canadians to the CDHA Web site. The CDHA made all promotional campaign materials available for members to download from its site.

- **Posters** were distributed to all members in the September/October issue of *Probe*. Members were encouraged to display the poster throughout the Week and all year long.
- New this year, the **Campaign Planning Kit** – *A guide to promoting National Dental Hygiene Week™*, was tailor-made for and distributed to each province. This easy-to-use how-to guide, which will grow with new ideas each year, provides tools, samples and tips for the provincial associations, as well as individual members, on how to make the most of the Week with media relations, advertising and other promotional ideas. Members could also download the Kit from the CDHA Web site www.cdha.ca. If there is anything you would like to see added to the Kit, something you think might help you or your colleagues, we invite you to share your ideas.
- The campaign also included a **public service announcement (PSA)**. Professionally produced in both English and French, the PSA provided important information for the Canadian public about the dental hygiene profession. The spot was broadcast by more than 60 radio stations across the country, reaching almost a million Canadians.

In addition to the activities above, the CDHA is now collecting stories on how individual dental hygienists from coast to coast got inspired and celebrated NDHW™ in their own unique way. New this year was the Oral-B NDHW™ 2000 Contest, one of CDHA's official sponsors, will be awarding a special prize – \$1000 to the most creative initiative. The winning entry, as well as many other compelling stories, will be featured in the upcoming March/April issue of *Probe*. Good luck to all!



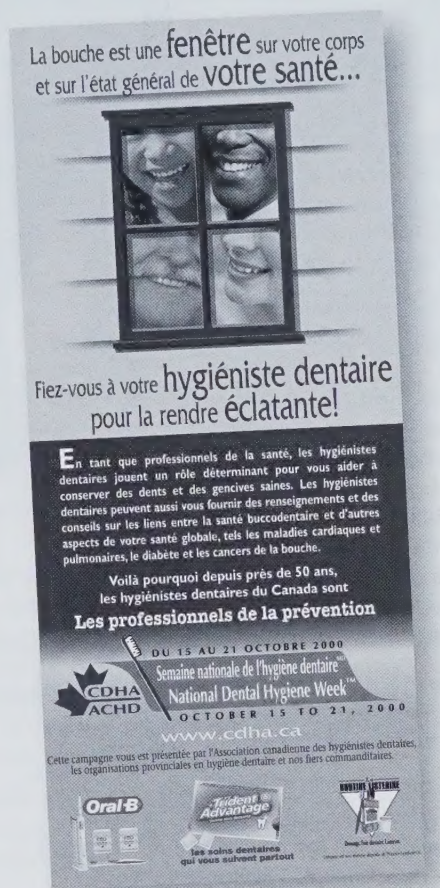
National Dental Hygiene Week™
Semaine nationale de l'hygiène dentaire™

Dernières nouvelles de la Semaine nationale de l'hygiène dentaire^{MD} de 2000

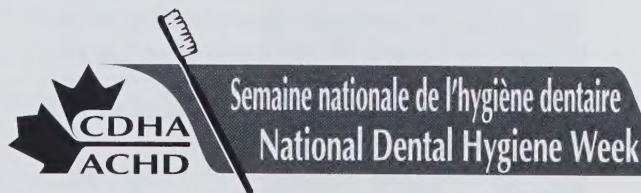
La Semaine nationale de l'hygiène dentaire^{MD} (SNHD^{MD}) 2000 s'est déroulée du 15 au 21 octobre 2000. Cette année, la SNHD^{MD} a placé l'accent sur la portée du travail des hygiénistes dentaires. Nous voulions que les Canadiennes et les Canadiens sachent que nous faisons bien plus que nettoyer leurs dents : nous jouons un rôle de premier plan dans le maintien de leur santé globale.

La SNHD^{MD} comportait de nombreuses activités promotionnelles au palier national, dont les suivantes :

- Nous avons fait paraître deux **annonces publicitaires** pour faire la promotion de la profession d'hygiéniste dentaire dans les deux plus importants magazines canadiens, c'est-à-dire *L'actualité* (numéro du 15 octobre) et *Maclean's* (numéro du 16 octobre). Des millions de Canadiennes et de Canadiens ont vu ces annonces.
- Nous avons placé un **hyperlien** sur la page d'accueil du site de *Maclean's* pendant plus de deux semaines, ce qui a attiré des milliers de Canadiennes et de Canadiens à notre site virtuel. Nous avions préalablement mis tous les documents promotionnels à la disposition des hygiénistes dentaires qui pouvaient les télécharger de notre site.
- Nous avons distribué des **affiches** à tous nos membres dans le numéro de septembre/octobre de *Probe* et les avons encouragés à les placer bien en évidence durant la Semaine nationale et tout au long de l'année.
- Nous avons produit, pour la première fois, la **trousse de planification de la campagne** : un guide pour la promotion de la SNHD^{MD}, qui était adapté à chaque province. Ce guide, très convivial, prendra de l'ampleur chaque année et cette première édition comportait une foule d'outils, d'exemples et de conseils pour les associations provinciales et les membres individuels sur la façon de tirer le maximum de la Semaine nationale de l'hygiène dentaire^{MD} grâce aux relations médiatiques, à la publicité et à d'autres moyens promotionnels. Vous pouvez également télécharger la trousse à notre site virtuel www.cdha.ca. Si vous désirez que l'on ajoute à la trousse des éléments qui vous seraient utiles ainsi qu'à vos collègues, n'hésitez pas à communiquer avec nous pour partager vos bonnes idées.
- La campagne comportait également des **messages nationaux d'intérêt public**, produits par des professionnels en français et en anglais, afin de renseigner la population canadienne au sujet de la profession des hygiénistes dentaires. Les messages ont été diffusés par plus de 60 stations de radio partout au pays et près de un million de Canadiennes et Canadiens les ont entendus.



En plus de toutes les activités ci-dessus, l'Association canadienne des hygiénistes dentaires collige actuellement les témoignages des hygiénistes dentaires d'un océan à l'autre pour savoir comment la SNHD^{MD} les a inspirés et de quelle façon ils et elles l'ont célébrée. Autre nouveauté pour l'édition 2000 de la Semaine nationale, le concours commandité par la marque Oral-B, qui remettra un prix de 1 000 \$ pour l'initiative la plus originale. Nous vous ferons connaître le nom du lauréat ou de la lauréate ainsi que bien d'autres histoires intéressantes dans l'édition de mars/avril de *Probe*. Bonne chance à tous et à toutes!



Happy 50th Anniversary Everyone!

This January is an extra-special month. Not only are we bringing in a brand-new year full of possibilities but dental hygienists across the country are also kicking off a full year of celebrations to commemorate a half-century of service to the Canadian public.

Fifty years ago in Saskatchewan, Mary Brett became Canada's first registered dental hygienist. She probably never imagined that, half a century later, dental hygienists would be described as clinicians, oral health educators, health promoters, consumer advocates, administrators, researchers and, most of all, prevention professionals. As dental hygienists, it's important to take time to think about the challenges that were faced and the milestones that were achieved by the pioneers of our profession. Our 50th anniversary is also an opportunity for each of us to look to the future and make our own mark on history.

To all the dental hygienists who came before us, we say:
"Thank you for paving the way for the future of the dental hygiene profession in Canada!"

To the Canadian public, we say:
"We do so much more than just clean your teeth! You can trust your dental hygienist to play an important role in the maintenance of your overall health."

To other health care professionals in Canada, we say:
"Together, we can work as partners in the oral health care continuum."

To the politicians, we say:
"Dental hygienists are registered, regulated, educated health professionals and we deserve the right to determine the future of our profession across Canada."

And, most importantly, we urge you to say to yourselves:
"We are genuine health professionals and we work to ensure that Canadians can eat, talk and smile for a lifetime. That's something we can all be extremely proud of!"

The year 2001 will be filled with memorable events to celebrate the 50th anniversary of the dental hygiene profession across Canada. We also encourage each of you to come up with your own ideas to mark the occasion. The festivities will culminate in Toronto at the CDHA's 12th Annual Professional Conference from September 21-23rd, 2001, which promises to be full of surprises. We hope you will decide to attend the Annual Professional Conference so that we can all celebrate this important moment in our profession together.

Joyeux 50^e anniversaire à tous et à toutes!

Ce mois de janvier 2001 est spécial à bien des égards. Non seulement entreprenons-nous une nouvelle année pleine de possibilités pour tous les hygiénistes dentaires du Canada, mais nous entamons une année de célébrations pour commémorer un demi-siècle de service à la population canadienne.

Voilà maintenant 50 ans, en Saskatchewan, Mary Brett devenait la première hygiéniste dentaire accréditée du Canada. Elle ne se doutait sûrement pas que un demi-siècle plus tard, les hygiénistes dentaires seraient reconnus comme des cliniciens, des éducateurs en santé buccale, des promoteurs de la santé, des défenseurs des consommateurs, des administrateurs, des chercheurs et surtout, des professionnels de la prévention. En tant qu'hygiénistes dentaires, nous devons prendre le temps de réfléchir aux défis qui ont été relevés ainsi qu'aux jalons qui ont marqué l'histoire de notre profession. Notre 50^e anniversaire est également l'occasion, pour chacun d'entre nous, de se tourner vers l'avenir et d'influencer l'histoire.

À tous les hygiénistes dentaires qui nous ont précédé, nous disons :
Merci d'avoir ouvert la voie à la profession d'hygiéniste dentaire au Canada.

Au grand public canadien, nous disons :
Nous faisons bien plus que nettoyer vos dents! Soyez assurés que votre hygiéniste dentaire joue un rôle de premier plan dans le maintien de votre santé globale.

Aux autres professionnels de la santé du Canada, nous disons :
Ensemble, nous pouvons travailler en partenariat pour contribuer au continuum de la santé buccale.

Aux politiciens, nous disons :
Les hygiénistes dentaires sont des professionnels de la santé formés, enregistrés et réglementés et nous avons le droit de déterminer l'avenir de notre profession partout au Canada.

Et, surtout, nous vous encourageons à vous dire :
Nous sommes de véritables professionnels de la santé et nous travaillons pour que les Canadiennes et les Canadiens puissent manger, parler et sourire tout au long de leur vie. Voilà quelque chose dont nous pouvons tous être fiers!

L'année 2001 comportera de nombreuses activités pour commémorer le 50^e anniversaire de la profession d'hygiéniste dentaire au Canada. Nous vous encourageons tous et toutes à marquer cette occasion à votre façon. Les festivités atteindront leur point culminant à la 12^e conférence professionnelle annuelle qui se déroulera à Toronto, du 21 au 23 septembre 2001, et qui sera remplie de surprises. Nous espérons que vous assisterez à cette conférence afin que nous puissions célébrer ensemble ce moment historique de notre profession.

CDHA attends OHDQ Convention in Saint-Hyacinthe



Chantal Normand, CDHA Board of Director representing the province of Québec with Dr. Esther Wilkins.



Dr. Wilkins visits the CDHA booth with representatives from Central Office, Angela Whelan, Manager of Communications Services and Louise Lalonde, Members Services Assistant.

The Canadian Dental Hygienists Association (CDHA) once again was proud to take part in the 2000 Convention of l'Ordre des hygiénistes dentaires du Québec (OHDQ), which took place in Saint-Hyacinthe between October 20th and October 22nd, 2000. This year's theme was entitled "Steer For The Future: Navigate Toward A New Horizon" with Keynote Speaker, Dr. Esther Wilkins helping to celebrate the important milestone of 25 years of dental hygiene in Québec.

It was the second time CDHA had taken part in the convention as an exhibitor. The 2000 Convention was a great opportunity to meet some of CDHA's current members and to welcome the record number of 693 dental hygienists in attendance. CDHA would like to extend its gratitude to OHDQ and to congratulate the organization for an excellent convention.

The next annual convention of l'Ordre des hygiénistes dentaires du Québec is planned for October 25th - 27th, 2002 in Montréal.

Nova Scotia Dentist, Dr. Burton Conrod, New President of the Canadian Dental Association

Dr. Burton Conrod of Sydney, Nova Scotia, assumed the office of president of the Canadian Dental Association following the Association's annual board of governors meeting in Ottawa, September 15 and 16.

Dr. Conrod received his dental degree from Dalhousie University in 1976. Since then, he has been practising in Sydney. Dr. Conrod is a past-president of the Cape Breton Island Dental Society and the Nova Scotia Dental Association. He has been a CDA governor since 1991 and a member of executive council since 1995.

Dr. Conrod is a member of the Pierre Fauchard Academy and the Academy of Dentistry International, and is a fellow of the International College of Dentists.





CDHA/ORAL-B DENTAL HYGIENE STUDENT SCHOLARSHIP

What is the Student Scholarship Program?

The Student Scholarship is awarded to undergraduate dental hygiene students for their contributions to the advancement of dental hygiene.

The program consists of:

- One \$1,000 scholarship to be used toward dental hygiene education expenses.
- Air travel expenses to and from the CDHA Annual Professional Conference and three nights accommodation at the conference hotel (Conference registration will be paid by the CDHA).

Who is Eligible?

- Undergraduate dental hygiene students.
- Applicants must be CDHA student members.

How to Apply

- Applicants must submit, in writing, a description of their involvement with the Canadian Dental Hygienists Association.
- Applications must be accompanied by the endorsement of two CDHA members.

Criteria for Judging

- Demonstrated involvement in the Canadian Dental Hygienists Association, e.g.
- Submitted material for publication in either of the CDHA journals *Probe* or *Probe Scientific Journal*.
- Demonstrated keen interest in national dental hygiene issues.
- Demonstrated qualities of leadership.
- Participation in National Dental Hygiene Awareness Campaign.
- Participation in national/international conferences such as table clinic presentations, poster sessions, presentations, etc.
- Applicants must describe how they have promoted oral health and the profession of dental hygiene in the community.

Note: The successful candidate agrees to submit for publication an article outlining his/her accomplishments and involvement in CDHA.

Application Deadline

Applications are to be submitted to CDHA's Central Office by **Wednesday, March 15, 2001.**

CDHA/ORAL-B GRADUATE STUDENT RESEARCH AWARDS (2)

Objective:

To promote the research training of Canadian dental hygienists in research-oriented Masters (1) and Doctoral (1) programs.

General description:

An award of \$5,000 will be given annually to highly qualified candidates enrolled as a graduate student in a Masters and a Doctoral program.

Eligibility:

Applicants for these awards must be Canadian dental hygienists who are Active, Associate, Student or Life members of the CDHA, in good standing, who may be studying full- or part-time. Applicants must present evidence of having been accepted for the related Masters or Doctoral program by a recognized academic institution.

Applications:

The deadline is **Saturday, April 1, 2001.** Applications must be submitted on forms available from CDHA's Central Office.

Duration:

These awards are made for one academic year for full-time students or the equivalent for part-time students. The awards may be considered for renewal for one additional academic year or its equivalent upon receipt of a satisfactory progress report. The progress report must detail work to date and include any pre-prints or reprints arising from the work. Any request for renewal of the awards must be accompanied by a letter from the research supervisor and one other professional referee.

Condition of support:

Upon completion of studies, recipients of these awards agree to provide a bound copy of the thesis or project to CDHA's Central Office.

For further information and/or application forms,

contact: Canadian Dental Hygienists Association
96 Centrepointhe Drive, Ottawa, ON K2G 6B1
Telephone: (613) 224-5515 Facsimile: (613) 224-7283
E-mail: info@cdha.ca

CALL FOR APPLICANTS:

CDHA DENTAL HYGIENE RESEARCH GRANT

Objective: To support Canadian dental hygienists engaged in research that enhances the dental hygiene profession's ability to promote health and well-being.

General description: A grant of \$5,000 will be awarded annually to a Canadian dental hygienist involved in qualitative or quantitative research as a principal investigator or co-investigator. Preference will be given to research projects relevant to the discipline of dental hygiene and the goals of the CDHA.

Eligibility: Applicants for this grant must be academically quali-

fied Canadian dental hygienists who are Active or Life members of the CDHA in good standing. Evidence of academic credentials at the Masters and/or PhD level is required.

Applications: The deadline is **Wednesday, March 31, 2001.** Applications must be submitted on forms available from CDHA's Central Office.

Condition of award: Upon completion of the research project, recipients of this grant agree to provide a written report for the *Probe* or reprints of journal articles to CDHA's Central Office.

Deadline
for submission
extended to
April 1, 2001

CDHA/Colgate Community Health Award

The Canadian Dental Hygienists Association (CDHA) in conjunction with Colgate Oral Pharmaceuticals, a subsidiary of the Colgate Palmolive Company, is proud to announce the CDHA/Colgate Community Health Award.

DENTAL HYGIENISTS VOLUNTEERING IN THEIR COMMUNITY

This award program recognizes CDHA members and individuals who have implemented significant community volunteer programs that focus on preventive oral health care.

AWARD

The first-place award recipient will receive a commemorative award, a \$3,000 donation, plus travel and hotel accommodations to the CDHA Annual Conference for one representative.

SELECTION

Selection will be conducted by the CDHA Community Health Award Committee. Committee decisions will be final.

RULES

Award recipients will be notified immediately following the selection. Presentations of the winner will be made at the CDHA Annual Conference.

ELIGIBILITY

Eligibility is limited to CDHA members.

- Community projects are those that document a community need and have specific measurable objectives.
- Community programs must involve volunteer dental hygienists and may include other members of the oral health care team.
- Examples of community projects are
 - Underserved populations
 - School programs
 - Programs for special populations
 - Media public information programs
- Any component or member or group of members responsible for implementing a volunteer community program concerned with some aspect of preventive oral health may submit an entry.

- The number of entries is not limited. An entry may be submitted by an individual, a group of individuals or a component; however, duplicate entries submitted will not be considered.

INELIGIBILITY

The CDHA/Colgate Community Health Award was created to recognize the volunteer efforts of CDHA members.

Examples of ineligible entries would be

- Entries/projects which allow students to fulfill scholastic requirements.
- Entries/projects in which participating dental hygienists are paid a salary for any portion of the entry/project.
- Entries/projects submitted by an employee or family member of the Canadian Dental Hygienists Association (CDHA), the CDHA Community Health Award Committee, the Colgate-Palmolive Company or its subsidiaries.
- Entries/projects for out of country programs.

SUBMISSION OF ENTRY

- All entries must be accompanied by a signed application available from the CDHA Central Office.
- All entries must be received in the CDHA's Central Office no later than **May 15, 2001**.
- A description of not more than 2-3 typewritten, double-spaced pages, including a 100-word summary, must be submitted along with the supporting documentation.
- Information on the amount and source of program funding, as well as how the money will be used, must be included.
- Personal job descriptions, resumes, and/or curricula vitae should not be submitted.
- Entry materials must be typed or printed.
- Entry materials will not be returned.

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Application Request



The CDHA/Colgate Community Health Award Application Request

Name _____ Signature _____

Home Address _____

City _____ Province _____ Postal Code _____

Telephone _____ Fax _____

The deadline for applications is **April 1, 2001**. The recipient of the grant will be notified by **May 15, 2001** and will have one year to implement the initiative. Entire entries must be received in the CDHA's Central Office. Please send to: Canadian Dental Hygienists Association, 96 Centrepointhe Drive, Ottawa ON K2G 6B1

Oral Hygiene Instruction Given to Children: Are the Knowledge and Skill Retained?

By Susan DeAngelis, RDH, EdD, Associate Professor,
Junior Clinic Coordinator, University of Arkansas for Medical Sciences,
College of Health Related Professions, Department of Dental Hygiene,
Angela Holloway McLain, RDH, B.S., Private Practice, Brinkley, Arkansas
and Jennifer Root Hodges, RDH, B.S., Private Practice, Ozark, Arkansas

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ABSTRACT

How well does a sixth-grade student retain the knowledge and skills presented in an oral hygiene presentation? To answer this question, 17 sixth-graders were given an oral hygiene knowledge test several days prior to a classroom presentation. At the conclusion of a half-hour presentation followed by a brushing practice session using typodonts, each student's brushing skill was evaluated and a knowledge post-test was administered. Six weeks later, the students were given a second post-test and brushing skill check to evaluate longer-term retention.

Results showed that the sixth-graders gained knowledge after the oral hygiene presentation and were able to retain that knowledge over a six-week period. Additionally, the students were able to maintain the brushing skill level, although girls demonstrated a better longer-term skill retention than boys did. There was no gender difference on the knowledge retention ($p < .05$). These findings suggest sixth-grade students are able to retain oral hygiene knowledge gained through a classroom presentation as well as brushing skill gained through hands-on demonstration. Further research is needed to determine if these results can be duplicated in a clinical setting or if retention of oral hygiene knowledge and/or brushing skill can be demonstrated over longer periods of time.

INTRODUCTION

Remember the old saying, "Give someone a fish and you feed them for a day. Teach someone to fish, and you feed them for a lifetime?" Patient education is like teaching our patients to fish. As dental hygienists, we can perform non-surgical periodontal therapy for a patient or polish the plaque-covered teeth of a child, but it is the daily disruption of colonized bacterial plaque, performed daily by the individual, that will have the greatest influence on the likelihood of disease development. Theoretically the knowledge and skills gained through patient education have the

potential to last long after the clinical services have been provided. Yet, it is not that easy. While patient education has been identified by dental hygienists as one of the most valued and frequently provided service, it is also among the most frustrating for dental hygienists. Waning patient interest, lack of time, unrealized results, and inability of patients to retain knowledge and/or skills are cited as frequent problems.^{3,4}

As dental hygienists, it is our hope that our efforts in patient education have lasting and meaningful effects. Providing a basis for our teaching efforts, the principles of learning theory posit that the learning environment and individual factors, such as motivation to learn and learning style, are potentially more influential in the learning process than the information being presented. Oral hygiene instruction should be based on shared expectations between the dental hygienist and the patient, individualized to the patient's needs as well as learning style, structured to actively involve the patient, and evaluation to determine outcomes of the instruction.³

Even when these principles are incorporated into our educational efforts, patients may not remember the information presented. To test learning retention, a series of pre- and post-tests that measured oral hygiene knowledge as well as tooth brushing skill were given to sixth-graders at a rural Arkansas elementary school. The purpose of this study was to evaluate 1) oral hygiene knowledge of sixth-graders prior to a presentation on the subject; 2) short-term, immediate retention of knowledge and brushing skill gained by a classroom presentation; and 3) longer-term retention of oral hygiene knowledge and brushing skill gained by a classroom presentation.

METHOD

The sample consisted of 7 boys and 10 girls enrolled in the sixth-grade at an elementary school in rural Arkansas during the spring of 1999. Two data collection instruments were employed - three different versions of an oral hygiene knowledge test consisting of 10 questions in a true or false

format, and a 20-item Modified Bass toothbrushing technique skill checklist. To ensure the appropriate content level and wording, the knowledge instruments were pre-tested on a separate class of sixth-graders at the same elementary school.

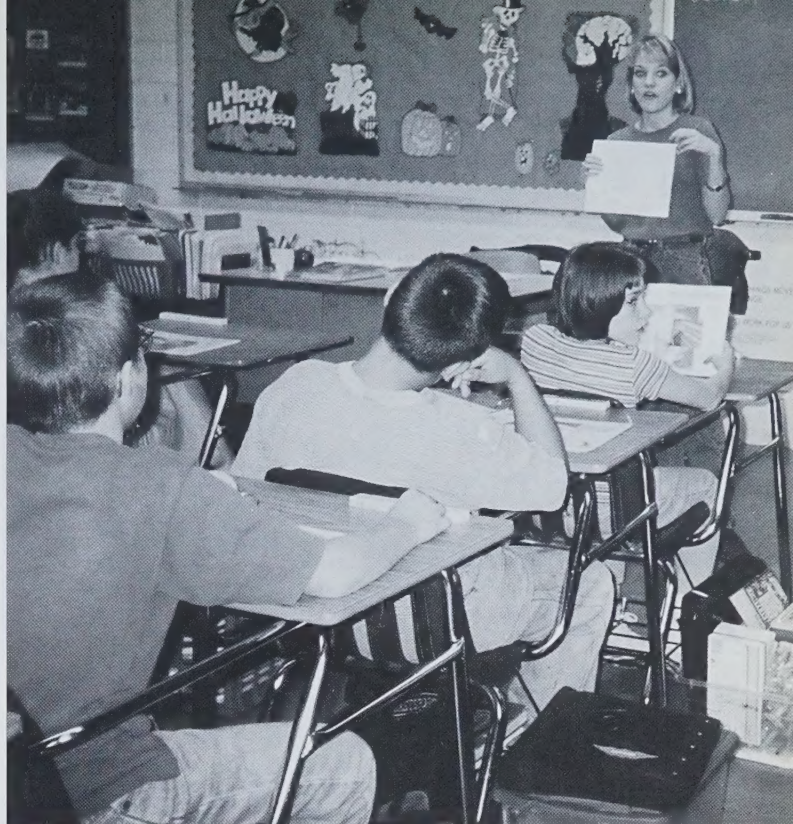
The students in the sample were given an oral hygiene knowledge pre-test several days prior to a classroom presentation. The half-hour classroom presentation included an overview of basic tooth anatomy, the formation of bacterial plaque, the decay process, and basic prevention of oral diseases. Also included was a demonstration of the Modified Bass sulcular toothbrushing technique, followed by a hands-on brushing practice session on typodonts with individualized instruction from two dental hygiene students from the University of Arkansas for Medical Sciences (UAMS). Using a 20-point checklist, each student was evaluated at the conclusion of the practice session to ensure the ability to correctly perform the Modified Bass technique (skill check 1). At the conclusion of the first skill check, the students were given a post-test (post-test 1) to evaluate short-term retention of knowledge presented in the oral hygiene presentation. To evaluate longer-term retention of both knowledge and brushing skill, a second post-test (post-test 2) and a second brushing skill check (skill check 2) were administered 6 weeks after the classroom presentation.

RESULTS AND DISCUSSION

Paired t-test analysis showed that the sixth-graders gained knowledge after the oral hygiene presentation and were able to retain that knowledge over a six-week period ($t = 2.746$; $df = 16$; $p < .05$). Additionally, the students were able to maintain the brushing skill level ($t = 1.973$; $df = 16$; $p < .05$), although girls demonstrated a better long-term skill retention than boys did. There was no gender difference on the knowledge retention ($p < .05$).

Descriptive statistics for the knowledge and brushing skill inventories are presented in Table 1. On the 10-item oral hygiene knowledge inventories, the sample of sixth-graders correctly answered an average of 8.9 questions on the pre-test and an average of 9.8 questions on both post-test 1 and post-test 2. The most frequently missed questions on the pre-test included: "It is normal for the gums to bleed when you brush your teeth?" and "A toothbrush with hard bristles will clean the teeth better than a toothbrush with soft bristles?" These items were answered correctly by all students on the post-tests. It appears that by the sixth-grade, these children had a relatively firm knowledge of basic oral health principles, and for most students, the few deficient aspects were rectified through the classroom presentation. Therefore, the classroom presentation appeared to be an effective medium by which to disseminate oral health education to children of this age and educational level.

Accordingly, the sixth-graders did remarkably well on their performance of the sulcular brushing technique given that most were currently using a circular or scrub brush method. Using a 20-item brushing skill checklist, the students scored an average of 18.5 on skill check 1 and 17.5 on skill check 2. On the brushing skill checklist, the most fre-



Dental hygiene student in the UAMS Dental Hygiene program conducts a classroom presentation on basic oral health to sixth-grade students.

quently missed criteria was the lack of a coronally-directed rolling motion at the end of the vibratory strokes and not placing the toothbrush parallel to the long axis of the tooth to clean the lingual aspect of the anterior teeth. These findings help to demonstrate that sixth-graders, on average, are able to not only master the relatively challenging Modified Bass technique but are also able to retain the skill over time. No prior research has demonstrated the appropriateness of this technique on children of this age. The children in this study possessed the dexterity required to adequately perform the Modified Bass technique.

CONCLUSION

This study found that sixth-grade students gained knowledge via a classroom oral hygiene presentation followed by

TABLE 1: Descriptive Statistics for Knowledge and Brushing Skill Inventories for the Sample and by Gender

Inventory	Boy		Girl		Total	
	n=7		n=10		n=17	
	mean	sd	mean	sd	mean	sd
Pre-test	9.0	1.000	8.9	.994	8.94	.966
Post-test 1	9.9	.3780	9.7	.483	9.76	.437
Post-test 2	9.9	.3780	9.7	.483	9.76	.437
Skill check 1	18.6	1.9518	18.2	2.098	18.47	2.004
Skill check 2	16.6	4.315	18.2	2.098	17.53	3.184



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Dental hygiene student provides individualized instruction on the Modified Bass technique to sixth-grade students.

a sulcular toothbrushing skill laboratory using typodonts. Furthermore, the students were able to demonstrate successfully short and longer-term retention of both the knowledge as well as the brushing skill. These findings suggest that a classroom presentation is an effective vehicle for disseminating oral hygiene instruction and children of this age and educational level are able to comprehend and successfully perform a more complex sulcular brushing method such as the Modified Bass technique.

Further research is needed to determine if these results can be duplicated in a clinical setting or if retention of oral

hygiene knowledge and/or brushing skill can be demonstrated over longer periods of time. Additionally, these findings are limited to this class of sixth-grade level children. Further research is suggested using samples of different age individuals with accompanying variation in the difficulty of the oral hygiene knowledge content.

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AUTHORS' BIOGRAPHIES

Susan DeAngelis, RDH, EdD, is associate professor and junior clinic coordinator, Department of Dental Hygiene; University of Arkansas for Medical Sciences, Little Rock, Arkansas; Angela Holloway McLain, RDH, B.S. is in private practice in Brinkley, Arkansas; Jennifer Root Hodges, RDH, B.S. is in private practice in Ozark, Arkansas; both are 1999 graduates of the University of Arkansas for Medical Sciences, Department of Dental Hygiene.



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A Dental Experience in West Africa

By Kelly Mabey, BSc. Dip.D.H.

Day after day of dental hygiene in private practice began to cause weariness, an inner motivation to make a difference finally peaked, and the two meshed together. I had been earnestly searching for avenues by which I could use my professional skills in creative and challenging ways. My search proved fruitful and in January of 2000, I found myself on a plane bound for a tiny country on the West Coast of Africa.

I was to join the crew of the M/V Anastasis, one of four vessels operated by Mercy Ships and presently docked in Banjul, the capital city of The Gambia. Mercy Ships is a non-profit organization providing medical relief assistance and development in developing nations. Mercy Ships seeks to take God's love to the poor and needy through practical assistance. Physicians, dentists, nurses and other health care professionals donate their skills and time to deliver medical help to those deprived of it. Not a single volunteer on board receives a salary, but rather pay for the privilege of serving the hopeless and helpless of this world. While on outreach for four months in The Gambia, volunteers worldwide joined the crew and provided local people with primary health care, surgeries to repair cataracts and cleft lips/palates, operations to remove face and neck tumors, dental treatment, water and sanitation skills and education, construction of two hospital facilities, all undergirded with love. The crew of over four hundred long and short-term volunteers represented approximately thirty-two nations. All lived on board the ship and worked for at least two weeks in their various areas of specialty.

// *Physicians, dentists, nurses and other health care professionals donate their skills and time to deliver medical help to those deprived of it.*

The Gambia is surrounded in the east, north and south by The Senegal, with its West Coast bordering on the Atlantic. The average annual income in this country is equivalent to approximately \$250 US. Hence, their access and ability to afford proper medical and dental care is minimal. The Muslim religion is predominant, but their government was receptive to a Christian organization coming into their country to provide the services desperately needed by their people. The dental clinic was located in the village of Brikama, about 45 minutes inland. This was done in an attempt to reach people who did not live near the port.



Local youths from Gambia receive primary health care from the crew of Mercy Ships.

The dental equipment consisted of everything one would need to provide acceptable and quality dental care. Things such as: amalgamators, curing lights, Cavitrans, manually reclining chairs, generators, compressors, instruments, filling materials, toothbrushes and floss, were all procured by the Mercy Ships organization, and were donated. Dentists, dental hygienists, and dental assistants came from countries such as the USA, Germany, England, Scotland, Canada, South Africa and Malaysia. Also on hand and integral to the functioning of the clinic were local interpreters. Although The Gambia is officially an English speaking country, most folks spoke one or several tribal tongues. As the time passed, we found ourselves picking up important phrases in the local languages. Key sentences like, "open your mouth", "what is your name?", "hello, how are you?", became trust builders with our patients.

The equipment was transported from the ship and set up in a building, which had been prearranged for rental. Once the clinic was functional, we began our days of active dental treatment. On a typical day, we would leave the ship and

make the drive to Brikama. As torn up as the roads were, and as hot as the weather was, these driving times allowed for necessary bonding within our team. Everyday, as we neared the clinic location, we could see the waiting line of patients hoping to see a dentist. These people would begin congregating as early as the night before. They would number as many as 80-90 people a day. Of course, not all of these patients were treated, but all were given dental education through an interpreter. At a given time inside the clinic, there would be one hygiene chair running with the familiar but tedious sound of the Cavitron and suction going almost continually. Three dentists ran chairs in the same large room as well. They could be performing anything from multiple extractions, to anterior composite resin placements, to posterior amalgam placements, to removal of forehead lipomas (we had a maxillo-facial surgeon on the team). All this, mingled with interpreters translating instructions, and compressors and generators running by gas in the backyard, made for a noisy, exhausting, yet joyful environment.

In the midst of all this, I was able to combat that stagnant feeling I had been battling back home. I was able to give dental tools and instruction to people whom had been using nothing but chewed-off sticks to clean their teeth. I provided education for parents and children who had never been taught that sugar could harm their teeth. I was able to hone and continually use my local anaesthetic skills under the supervision and occasional instruction of our dentists. I had the pleasure of performing a few extractions (uncomplicated of course). I witnessed and assisted for surgical

procedures such as the removal of intraoral and extraoral cysts and growths. I watched patients leave the clinic after having their teeth scaled and polished, smiling from ear to ear. I interacted with the people open to our care, and deeply appreciative of our efforts to give them assistance.

In retrospect, I guess I embarked on this adventure looking for satisfaction in my work and in knowing that I gave something to people who were in need. I found that and more. In the nine weeks I was a part of the Mercy Ships team, I benefited from being among a nation of people who are content with little, and whose daily lives are spent being a community of individuals who care about each other. Such a contrast from our world where we are discontent with much and are continually coming up with new ways of being independent and merely looking out for ourselves. Dentally, I realize that the care we provided to the Gambians is just a small drop in the bucket in meeting their needs. But what joy it was to see our interpreters become comfortable with providing proper dental education and oral hygiene instruction on their own. One of our interpreters was even planning to continue with this program in the local schools. I do have the satisfaction in knowing that I have used the resources and training I am privileged to have, to give something to fellow men, women and children who have little.

I would love to return and work with The Anastasis again. It is, of course a financial expense, but well worth the sacrifice. If you would like further information on Mercy Ships, log on to their web site at www.mercyships.org



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Update on Toothpastes

By Christine Thibault, H.D., B.Sc.

1999 READER'S AWARD WINNING ARTICLE

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L'Explorateur, Journal of l'Ordre des hygiénistes dentaires du Québec, Vol. 9, No. 1, April 1999.

There are many ways of cleaning one's teeth. In fact, as many toothpastes there may be available on the Quebec market, as many there are different recipes!

Toothpastes all contain basic ingredients: abrasives, water, moisteners, detergents, binding materials, aromatics, sweeteners, colouring and preservative agents, to which are added therapeutics. However, the types of ingredients used as well as their proportions vary from one product to another and that is a well kept secret of the manufacturers!

In this article, for reasons of conciseness, various toothpastes have been grouped in categories without regards to their degree of abrasiveness, their formulation as paste or gel, or their flavour.

FLUORIDATED TOOTHPASTES

Usage: Prevention of cavities.

Active ingredients:

- Sodium Fluoride (NaF) and/or
- Sodium Monofluorophosphate (MFP)

Recommendations: Always use a toothpaste that contains fluoride as it is essential to the teeth throughout their lifetime.

Trade names:

- Aim;
- Aquafresh Triple Protection;
- Close-up, green mint;
- Close-up, red;
- Colgate Cavity Protection;
- Crest Cavity Protection;
- Glister (Amway);
- Macleans.

Almost all toothpastes contain fluoride except those that are labelled «fluoride free» and natural toothpastes that rarely contain this ingredient.

Examples of fluoride free toothpastes:

- Sensodyne Original (pink);
- Pepsodent;
- Fluoride free Topol.

At the other end of the scale, *Prevident 5000* plus contains very high levels of fluoride that may strengthen tooth enamel and help prevent or control root cavities.

TARTAR CONTROL TOOTHPASTES

Usage: Slows the development of supragingival tartar.

Active Ingredients:

- Soluble pyrophosphates or other chemical compounds.

Cautions:

- Does not eliminate existing tartar nor does it reduce the development of sub-gingival tartar. Only professional dental cleaning can remove the tartar.
- Recommended only for adults and children over the age of 12.

Remarks:

- These toothpastes are no more expensive than others; there is no disadvantage in trying them if one tends to develop tartar easily.
- The anti-tartar effect of the toothpaste Colgate Total does not rely on pyrophosphates but rather on a combination of triclosan and gantrez.
- Some toothpastes are labelled as «fighting tartar during brushing» but do not contain anti-tartar ingredients. It is rather the physical action of the brushing that prevents tartar build-up.

Trade names:

- Tartar fighting Aquafresh;
- Close-up tartar control with baking soda;
- Colgate Tartar Control;
- Colgate Tartar Control whitening;
- Crest MultiCare;
- Crest Tartar Protection;
- Tartar-fighting Dental Care;
- Natural White whitening and tartar fighting toothpaste.

ANTIBACTERIAL TOOTHPASTES

Usage: Reduce gingivitis through antibacterial properties

Active ingredients:

- Triclosan with or without gantrez (gantrez favours retention) or sanguinarine.

Cautions:

- Are useful for current gingivitis (at the stage of bleeding);
- Do not compensate for inadequate dental care;



- Recommended only for adults and children over the age of 12.

Comments:

- Do not appear to encourage the development of resistant bacteria although the proliferation of antibacterial products in the environment may cause some confusion.
- Despite its name, Crest MultiCare is a tartar control toothpaste and not an antibacterial one.

Trade names:

- Colgate Total
- Crest Ultra
- Sensodyne-F (now with Triclosan)
- Viadent (sanguinarine)

WHITENING TOOTHPASTES

Usage: Help eliminate external dental stains.

Active ingredients:

- Silica
- Alumina
- Polyphosphates

Cautions:

- These toothpastes cannot whiten the teeth. Their whitening effect is due to the removal of surface stains rather than to a real change in the colour of the enamel.
- Some contain powerful or harsh abrasives that may damage soft tissues.
- Others contain increased quantities of softer abrasives but that does not make them more abrasive.

Comments:

- Most of these toothpastes are much more expensive than ordinary toothpastes.

Trade names:

- Aquafresh Whitening;
- Crest Extra Whitening;
- Colgate Platinum;
- Colgate Whitening Sensation;
- Natural White whitening toothpaste;
- Natural White Rapid White whitening toothpaste;
- Pearl Drops whitening toothpaste gel;
- Pearl Drops extra-strength whitening toothpaste;
- Rembrandt Original formula;
- White Balance whitening toothpaste;
- White Step concentrated whitening toothpaste.

TOOTHPASTES FOR SENSITIVE TEETH

Usage: Block pain to ensure that dental hygiene is not compromised by painful brushing.

Active ingredients:

- Strontium chloride – blocks dental canaliculi to reduce tactile sensitivity or;
- Potassium nitrate – blocks the transmission of sensitive nervous impulses and is more efficient in reducing thermal (heat or cold) and osmotic (sweet and sour) sensitivities.

Cautions:

- One must check with his dentist to ensure that there is not a more serious problem;
- Recommended only for adults and children over the age of 12.

Comments:

- Relief may only be felt after two weeks;
- In order to achieve the same beneficial results as regular toothpastes, other ingredients such as tartar control or antibacterial agents or baking soda may be added.
- Often contain a rather weak abrasive.

Trade names:

- Aquafresh Sensitive;
- Crest Sensitivity Protection;
- Dental Care Sensitive;
- Oral-B toothpaste for sensitive teeth;
- Rembrandt for sensitive teeth;
- Sensodyne-F

BAKING SODA TOOTHPASTES

Usage: Mainly in response to consumer tastes. The «natural» attraction without specific cleansing effects. May combine anti-cavity protection and sometimes tartar control protection.

Active ingredients:

- Sodium bicarbonate (baking soda)

Cautions:

- May be ill advised for persons following a low-sodium diet.

Recommendations:

- The myth that these toothpastes be overly abrasive for daily use is completely false. In fact, baking soda is at least as gentle for the teeth as other abrasives currently used. Furthermore, its abrasive factor diminishes when in contact with water.
- If one uses natural baking soda to brush one's teeth, it is recommended that one also uses a fluoridated mouth wash.
- In practice, it is found that persons using a toothpaste with a high content of baking soda have a lower incidence of stains.

Trade names:

- Aquafresh with Baking Soda;
- Crest cavity protection with baking soda;
- Dental Care;
- Natural White whitening toothpaste with baking soda;
- Sensodyne-F with baking soda freshener;
- Topol plus with baking soda;
- White Balance whitening toothpaste with baking soda.

TOOTHPASTES CONTAINING PEROXIDE

Usage: Contrary to popular belief, the concentration of peroxide contained in toothpastes is too small and the contact with teeth is too short to whiten them. These toothpastes rather help remove debris from areas that are difficult to access by creating a foaming effect due to the presence of the peroxide's oxygen freeing property.

Active ingredients:

- Sodium Bicarbonate (Baking Soda)
- Peroxide

Comments:

- Until recently, these toothpastes were not authorised in Canada.
- Presently, there are no studies available concerning the efficiency and harmlessness of the peroxide present in a toothpaste for daily use.

Trade names:

- Colgate sensation with baking soda and peroxide.

TOOTHPASTES FOR SMOKERS

Usage: Not recommended.

Active principle: Increase in the level of abrasiveness to remove stains caused by smoking.

Cautions:

- Danger of premature wearing of the enamel and gum recession.

Trade names:

- Topol;
- Topol without fluoride.

TOOTHPASTES FOR CHILDREN

Usage: Encourage the brushing of teeth in children.

Active ingredients:

- Fluorides – some may contain less or none.

Cautions:

- It is important that children use a fluoridated toothpaste as soon as their teeth appear. However, because of their pleasant taste, children's toothpastes encourage an overuse of the toothpastes;
- For children under the age of six, it is recommended that:
 - brushing be supervised by an adult;
 - that quantities of toothpaste used be smaller than the size of a pea (a quantity the size of a pea previously recommended is in fact excessive);
 - avoid swallowing the toothpaste;
 - spit after brushing.
- Otherwise, one should use a toothpaste containing a lesser concentration of fluoride.

Trade names:

- Aquafresh for kids;
- Baby Oragel;
- Colgate Super Star;
- Crest for kids;
- Oral-B Les Razmoket;
- Pre Step (without fluoride)

NATURAL TOOTHPASTES

Usage: When one wishes to avoid artificial ingredients such as sweeteners, colouring and preservative agents.

Active ingredients: Other than sweeteners that tend to be avoided, the same categories of basic ingredients are used as in ordinary toothpastes but with a preference for natural products.

Cautions:

- Rarely contain fluoride
- Vegetable extracts may cause gum irritation and allergic reactions.

Comments:

- Often imported explaining their high costs;
- Some tend to be remedies rather than toothpastes due to their impressive lists of vegetable extracts.

Trade names:

- A.-Vogel (Switzerland) echinacea based toothpaste;
- A.-Vogel (Switzerland) rosemary based toothpaste;
- Auromère (India);
- Auromère (India) without mint;
- Dentargile (France) lemon;
- Dentargile (France) mint;
- Herbadent (Italy);
- Nature's Gate (USA) natural toothpaste gel comprised of plants: fresh mint, wintergreen, cherry;
- Nature's Gate (USA) Herbal cream with anise, peppermint and mint.
- Peeler (USA) green mint, peppermint, cinnamon;
- Shaklee;
- Tea Tree (Australia);
- Tom's of Maine (USA) peppermint, green mint, cinnamon, fennel, baking soda;
- Vegetocaryl (France) toothpaste for sensitive gums;
- Vegetocaryl (France) whitening toothpaste;
- Vicco (India).

HOMEOPATHIC TOOTHPASTES

Usage: Recommended with homeopathic treatments.

Active ingredients:

Are similar to those in natural toothpastes except for the mint. In fact, these toothpastes never contain mint as it is considered incompatible with homeopathic treatments.

Comments:

Often contain fluoride.

Trade names:

- Lehning Homeopathic Toothpaste (France);
- Vendôme Homeopathic Toothpaste (France);
- Homéodent 2 (France).

CONCLUSION

Keeping this update in mind, we may also make our choice by referring to the seal of recognition of the Canadian Dental Association which is a symbol of demonstrated quality and efficiency in the prevention and control of cavities and sometimes in the reduction of gingivitis.

For more information about a toothpaste, you may contact the manufacturer.

In answer to individuals wondering about the «expiry» date on the packaging, the law requires that all toothpastes containing fluoride have a Drug Identification Number (DIN) and an «expiry» date since fluoride is considered medication.

UPDATE ON TOOTHPASTES ...continued on page 28

By Karen Wolf, Dip.D.H.

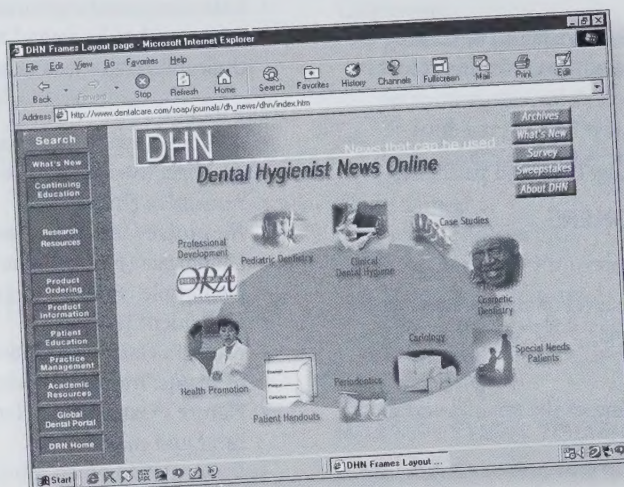
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Welcome 2001! A New Year and new adventures. I hope you all had a wonderful Christmas and a very Happy New Year. Winter came early this year here in Nova Scotia but it brought with it the snow which means outdoor activities for a pleasant change. This, however, hasn't detained me from probing the web for interesting sites to write about.

My first site is an "oldie" that has been spruced-up: <http://www.dentalcare.com>

I have written about this site in the past because of the great opportunities for RDH's to receive FREE Continuing Education Online (*user name and password required*). There are courses for dentists, dental hygienists, assistants and office managers. Some of the courses for dental hygienists include: Treatment of an Edentulous Patient with Xerostomia; Oral Healthcare: A Whole New Language; Periodontitis as a Risk Factor for Cardiovascular Disease; Dental Hypersensitivity; Seizure Disorders; Ergonomics in Dentistry; Periodontal Screening and Recording: An Early Detection System; and more.

For the Consumer there are three sites: Crest Family Care, www.whitestrips.com, and a link to Children's Galactic



Voyage in www.sparkle-city.com.

Under the Hygienists' Corner the Dental Hygiene News Online offers information on: Personal Development, Pediatric Dentistry, Clinical Dental Hygiene, Case Studies, Cosmetic Dentistry, Health Promotion, Patient Handouts, Periodontology, Cariology, and Special Needs Patients. If you are

finding that your radiographs are getting progressively worse and you need to brush up on your technique and "know-how" check out some tips under the Clinical Dental Hygiene icon.

Finally, new oral health care products are being developed and marketed more quickly today than ever before and I find it difficult to keep ahead from time to time. Use the Internet to update yourself through the Product Information icon at the following websites:

ORAL B	www.oralb.com/catalog/index.htm
BUTLER	www.jbutler.com/consumer_page.asp
COLGATE	www.colgate.com/cp/corp.class/products/index.jsp
CREST	www.dentalcare.com

UPDATE ON TOOTHPASTES (continued from page 27)

Finally, it is important to underline that, if a toothpaste irritates or causes sensitivity, its use should be discontinued.

Dental health professionals should be aware of the variety of toothpastes available on the market as well as of their beneficial effects in order to be able to help their clients make informed choices although brushing and flossing are still the basis of adequate dental hygiene.

INTRODUCING THE AUTHOR

The author obtained a diploma in dental hygiene from Collège Maisonneuve in 1987 and a Bachelor of Sciences Degree from the Université de Montréal in 1998. Ms. Christine Thibault is an active and committed professional in the field of dental hygiene.

In fact, for many years, she has been active on the committee for continuing and professional training of the Ordre des hygiénistes dentaires du Québec, has undertaken scien-

tific research on various products and publishes on a regular basis in the scientific publication *L'Explorateur*, and is a resource person for numerous magazines aimed at the general public including *Protégez-vous* and *Coup de pouce*. Furthermore, she was awarded the Prix Sylvie de Grandmont in 1996, award of excellence for her contribution to the development and recognition of the profession. Ms. Thibault works in a private practice where she can share the fruits of her research.

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Diagnosis and Treatment of Recurrent Aphthous Stomatitis Reviewed

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Introduction - Recurrent aphthous stomatitis (RAS) is the most common disease affecting the oral mucosa. Despite intensive investigation, no clear cause of RAS had been identified. The estimated prevalence of RAS in the population is 5% to 25%, but may range as high as 50% to 60% in certain groups. This article reviews key diagnostic and treatment considerations in RAS.

Diagnostic Considerations - Most cases of RAS are classified as minor, consistent of recurrent, small, painful ulcers, usually no larger than 10 mm. These lesions heal within 14 days, without scarring. About 10% to 15% of cases of RAS are classified as major RAS. The lesions are similar but larger and deeper, take longer to heal, and may leave scars. Significant pain and dysphagia may result. Major RAS is commonly associated with HIV infection. Some patients with RAS show underlying anemic states on hematologic screening. A biopsy is necessary only if some other oral mucocutaneous condition is suspected (Table 2). Recurrent or persistent RAS may be associated with certain systemic diseases, requiring medical referral.

Management of RAS - Treatment for RAS seeks to promote ulcer healing, to reduce pain, to maintain nutrition, and to prevent recurrence. Episodes of minor RAS require only palliative treatment to reduce pain. However, frequent recurrences or severe pain may be an indication for drug

treatment. The first line of treatment is topical anti-inflammatory agents, consisting of strong topical corticosteroids combined with mucosal adherents (Table 3, see page 30). Fluocinonide, triamcinolone, and clobetasol are all of proven effectiveness. Topical treatments are most effective if given when ulcers are in an early stage. Topical rinses may provide symptomatic relief in minor RAS. Effective management may also require treatment of nutritional or hematologic deficiencies, avoidance of allergy-causing foods, and treatment of systemic diseases. Immunosuppressive therapy with prednisone or other agents may be considered for patients requiring more aggressive treatment; thalidomide may be indicated for severe cases.

Clinical Significance - Recurrent aphthous stomatitis is a very common, usually mild condition. The cause is unknown; the diagnosis usually does not require extensive laboratory tests. This article outlines a systematic approach to treatment, starting with topical corticosteroids.

Ship JA, Chavez EM, Doerr PA, Henson BS, Sarmadi M: Recurrent aphthous stomatitis. *Quintessence Int* 31:95-112, 2000

TABLE 2. DIFFERENTIAL DIAGNOSIS OF RECURRENT APHTHOUS STOMATITIS

DIFFERENTIAL DIAGNOSIS	ORAL SIGNS	OTHER SIGNS AND SYMPTOMS
Recurrent aphthous stomatitis	Single or multiple ulcers on unattached mucosa	May be associated with oropharyngeal or gastro-intestinal ulcers
Herpes simplex virus	Single or multiple ulcers on attached mucosa; diffuse gingival erythema	Preceding fever and mucosal vesicles
Varicella zoster virus	Extraoral and intraoral ulcers; unilateral distribution	Prodrome of pain and burning; may cause scarring and neuralgia
Herpangina	Multiple ulcers in hard palate, soft palate, and oropharynx	Fever and malaise
Hand-foot-and-mouth disease	Ulcers preceded by vesicles	Skin lesions, low-grade fever, and malaise
Erythema multiforme	Lesions on attached and unattached mucosa; lip crusting; may be preceded by herpes infection	Sudden onset of skin macules and papules; target lesions on skin
Oral lichen planus	Erosive and reticular lesions on buccal mucosa, gingiva, palate, and tongue; white (Whickham's) striae	May be asymptomatic; lesions may occur on skin
Cicatricial pemphigoid	Vesiculobullous lesions on attached and unattached mucosa; positive Nikolsky's sign	Can affect eyes and genitalia; lesions may scar
Pemphigus vulgaris	Vesiculobullous lesions on attached and unattached mucosa; positive Nikolsky's sign	Lesions can occur on skin

TABLE 3. TOPICAL THERAPY FOR RECURRENT APHTHOUS STOMATITIS

MEDICATION	CONCENTRATION		DOSAGE	MECHANISM OF ACTION
Gels, creams, and ointments*				
Fluocinonide	0.5%	0.5 cm/0.25 inch		Corticosteroid - anti-inflammatory
Triamcinolone	0.025%	0.5 cm/0.25 inch		Corticosteroid - anti-inflammatory
Clobetasol	0.5%	0.5 cm/0.25 inch		Corticosteroid - anti-inflammatory
Amlexanox	5%	0.5 cm/0.25 inch		Anti-inflammatory and antiallergic
Doxymylin-cyanoacrylate		0.5 cm/0.25 inch		Mucosal adherent
Rinse†				
Sucralfate	1 g/10 mL	5-mL rinse qid		Protective effect - binds proteins at the ulcer surface
Tetracycline	2.2 mg/mL	5-mL rinse qid		Antimicrobial - reduces collagenase activity
Lidocaine hydrochloride	2% viscous	5-mL rinse qid		Analgesic
Diphenhydramine	12.5 mg/5 mL	5-mL rinse qid		Analgesic
Dyclonine hydrochloride	1% solution	5-mL rinse qid		Analgesic
Dexamethasone	0.5 mg/5 mL	5-mL rinse qid		Corticosteroid - anti-inflammatory*

*Fluocinonide, triamcinolone, or clobetasol can be combined with Orabase to improve mucosal adherence.

†Tetracycline, lidocaine, diphenhydramine, dyclonine, or dexamethasone may be combined in a 1:1 mix with sucralfate, Kaopectate (attapulgate) (Upjohn), or Maalox (aluminum hydroxide, magnesium hydroxide) (Rhône-Poulenc) for palliative relief. Other combinations of more than one of these, or similar agents, can be reviewed with a pharmacist. (Courtesy of Ship JA, Chaves EM, Doerr PA, Henson BS, Sarmadi M: Recurrent aphthous stomatitis. *Quintessence Int* 31:95-112,2000.)

DENTAL ABSTRACTS VOLUME 45 #3 2000

Preventive Dentistry

LITTLE RISK TO CHILDREN FROM ESTROGEN-LIKE COMPOUNDS IN DENTAL MATERIALS

Introduction - Recent reports have suggested that estrogenic compounds such as bisphenol A (BPA) leach into the human body from dental sealants and composite resins. The findings of a biomaterials group, designed to give practitioners information needed to allay concerns of patients, are reviewed.

Xenoestrogens - Xenoestrogens, although structurally unrelated to estrogen, have the ability to mimic the effects of estrogen. They are suspected in increased incidences of breast cancer and decreases in sperm counts. Concern about the effects of BPA and other contaminants of resins comes from its classification as a xenoestrogen. Major sources of xenoestrogens include the lining of food and drink cans, pesticides, and preservatives. Both BPA and BPA dimethacrylate (BPA-DM) have been found to have the potential to mimic the effects of estrogen on certain estrogen-responsive cells. However, BPA was not found in any sealants made in the United States. BPA-DM is added as a copolymerizer to some resins. Detectable BPA-DM appears to be from unpolymerized chemicals in the air-

inhibited layer. This layer of resin can be removed, thereby reducing residual chemicals. Rinsing with air-water spray reduced the amount of detectable monomer in this surface layer, but the use of a pumice slurry provided an even greater reduction in monomer content.

Conclusions - BPA has not been detected as a contaminant of any American brand of sealant tested. BPA-DM, although found in some materials, is avoidable. Other sources are more likely to make up the bulk of exposure to these compounds.

Clinical Significance - On the basis of these findings, practitioners can reassure patients and parents that children are less likely to be exposed to negative substances from dental sealants than from the ingestion of soft drinks or canned foods.

Schafer TA, Lapp CA, Hanes CM, Lewis JB: What parents should know about estrogen-like compounds in dental materials. *Pediatr Dent* 22:75-76, 2000

Periodontal Disease Linked to Rheumatoid Arthritis

Introduction - Past studies have shown associations between periodontal disease and various systemic diseases, including atherosclerosis and diabetes mellitus. There is also some evidence of a link with rheumatoid arthritis, a chronic inflammatory disease with similar patterns of soft-tissue and hard-tissue destruction. Despite the differing etiologies, there are some pathologic similarities between these conditions. This study assessed the possible relationship between rheumatoid arthritis and periodontal disease.

Methods - Of 1412 adult patients seen at an Australian university dental school, 809 were referred for periodontal treatment. Information on severity of periodontitis was collected from the dental records. Questionnaire responses were used to assess the prevalence of rheumatoid arthritis. The presence of cardiovascular disease and diabetes mellitus was assessed as well.

Results - The prevalence of rheumatoid arthritis was 3.95% among patients referred for periodontal treatment, compared with 0.66% in those referred for general dental

treatment and a reported population rate of 1.0%. Of the patients with periodontal disease and rheumatoid arthritis, 62.5% had advanced periodontitis. As expected, the periodontal patients also had higher rates of cardiovascular disease and diabetes mellitus.

Discussion - The findings suggest a significant relationship between 2 common chronic inflammatory conditions. Patients with periodontal disease appear to be at increased risk of rheumatoid arthritis, and vice versa. The authors point out some intriguing pathogenetic similarities between the 2 conditions (Fig 3).

Clinical Significance - Here is more evidence linking periodontal disease to important systemic diseases. The study is limited by its reliance on self-report data.

Mercado F, Marshall RI, Klestov A, et al: Is there a relationship between rheumatoid arthritis and periodontal disease? *J Clin Periodontol* 27:267-272, 2000

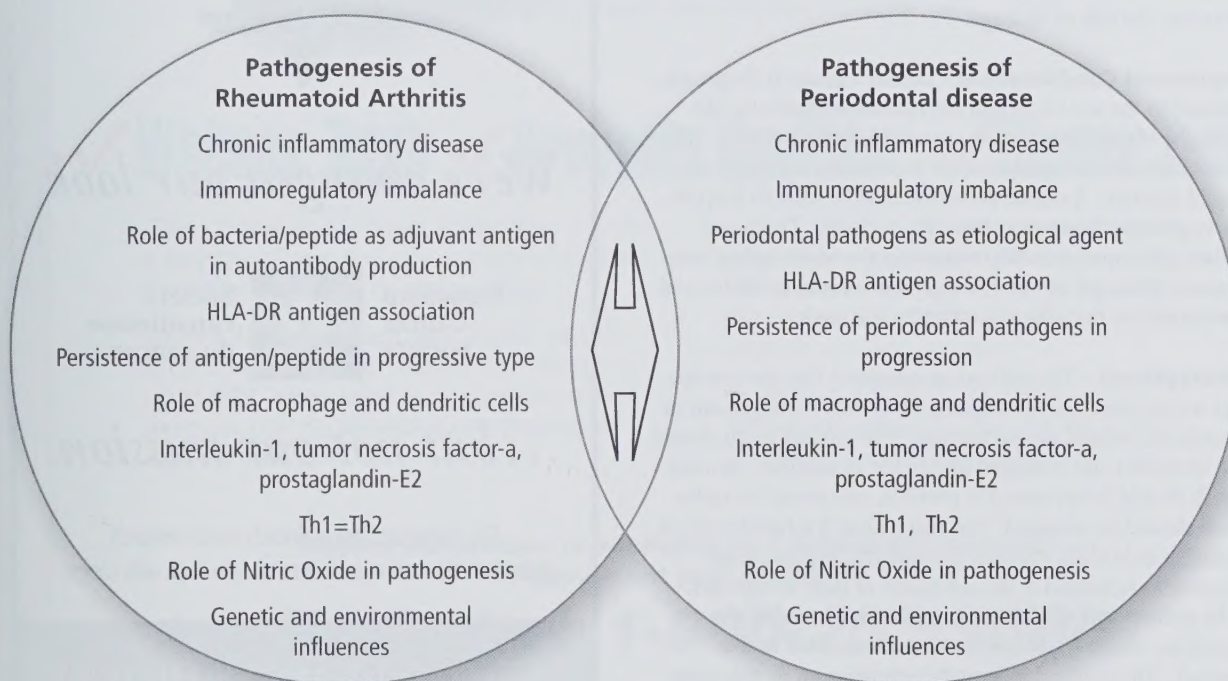


Figure 3 - Possible interrelationships between rheumatoid arthritis and periodontal disease. (Courtesy of Mercado F, Marshall RI, Klestov A, et al: Is there a relationship between rheumatoid arthritis and periodontal disease? *J Clin Periodontol* 27:267-272, 2000.)

Oral and Maxillofacial Surgery

DENTAL HAZARDS OF ANESTHESIA: RISK FACTORS, PREVENTION, AND MANAGEMENT

32

Introduction - Damage to the teeth, often caused by "routine" intubation, is a common complaint against anesthesiologists. The problem of anesthesia-related dental injuries, including preventive measures and management, is reviewed.

Risk of Dental Trauma Associated With Anesthesia

Previous reports suggest a 0.02% to 0.7% incidence of anesthesia-related dental trauma. However, one study that included dental examination before and after endotracheal anesthesia found an overall 12% frequency of dental trauma. A preanesthetic dental history and oral examination are important to reduce this risk. Dental trauma is more likely in patients with pre-existing dental problems or dental prostheses. However, even sound teeth are at risk. The rate of trauma is highest for the upper central incisors. Damage to teeth is more likely when the teeth are pathologically weakened, when intubation technique is poor, when atypical forces are placed on the teeth, and in other circumstances. Various diseases and their treatment may also increase the risk of damage.

Equipment Considerations - Dental damage is frequently related to the use of certain laryngoscope blades (ie, the straight Magill blade or the curved MacIntosh blade). The use of alternative equipment or techniques may help to avoid injuries. A dental protector may be used to keep the laryngoscope blade away from the incisors. These and other techniques can help to protect the teeth during intubation, although airway management should never be compromised for the sake of protecting the teeth.

Management - The authors recommend that the anesthesia service have a prearranged plan for the management of anesthesia-related dental trauma. The injured tooth should be identified and managed as quickly as possible. Avulsed teeth should be replanted if possible, and dental consultation should be obtained. For chipped or fractured teeth or damage to bridges, crowns, or implants, urgent dental treatment is needed if the soft tissue or pulp is exposed. The patient and the family should be informed of the incident, which should be accurately recorded in the record. The medical indemnity organization or risk manager should be informed. Claims against anesthesiologists for dental damage are common, but the plaintiff must prove that the anesthesiologist was negligent.

Discussion - The three main risk factors for anesthesia-related dental trauma are the presence of dental disease or prostheses, abnormal jaw relationship or tooth alignment, and emergency surgery. The use of the MacIntosh laryngeal blade or oropharyngeal airway may also be a contributing factor. Anesthesiologists can reduce the risk of dental damage by understanding these risk factors and the techniques for minimizing risk.

Clinical Significance - This article reviews the risk of anesthesia-related dental trauma from the viewpoint of the anesthesiologist. The dentist may be called on to manage such injuries on an urgent or nonurgent basis.

Owen H, Waddell-Smith I: Dental trauma associated with anaesthesia. *Anaesth Intensive Care* 28:133-145, 2000



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¹ ACNielsen Market Share Data, Nov-Dec. 99

² D. Kandelman and G. Gagnon, *Journal of Dental Research* 69 (11): 1771-1775, 1990

³ Birkhed D. Cariologic aspects of xylitol and its use in chewing gum: a review. *Acta Odontol Scand* 52: 116-127, 1994

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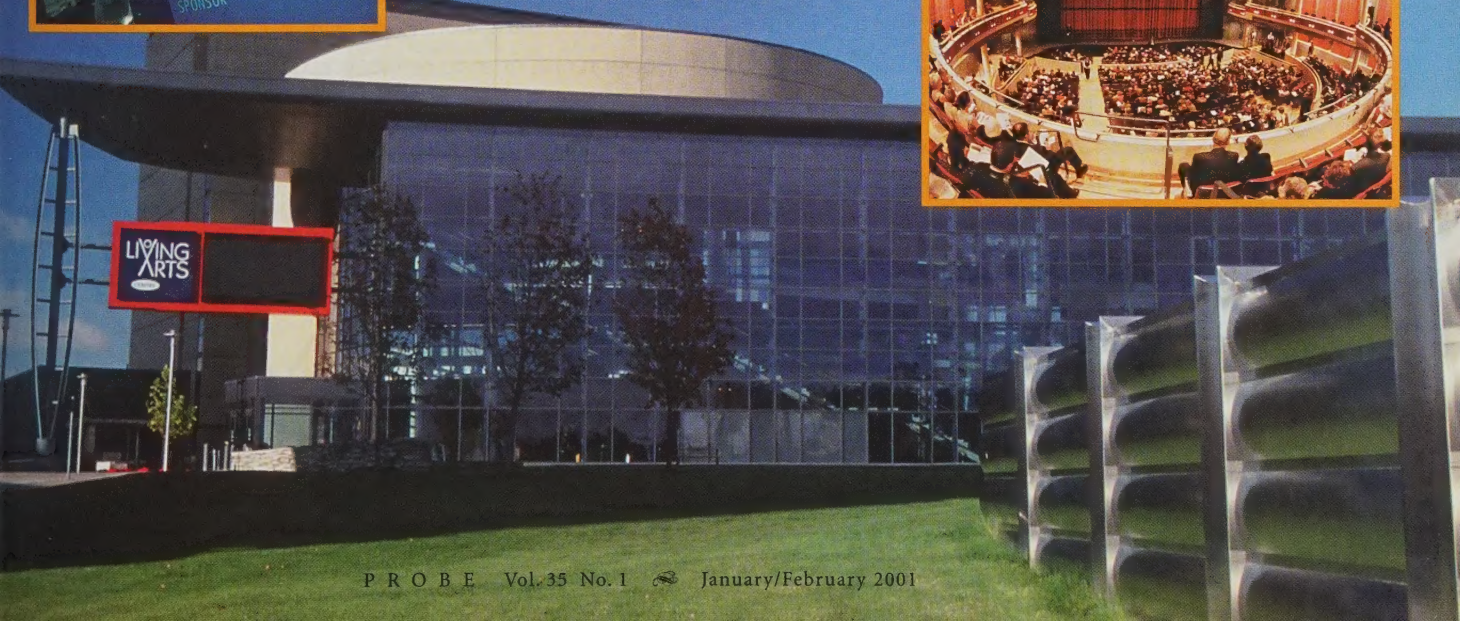
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† "Listerine helps reduce gingivitis (minor inflammation of the gums caused by plaque above the gumline) when used in a conscientiously applied program of oral hygiene and dental care." CANADIAN DENTAL ASSOCIATION

References: 1. Mandel IM. Antimicrobial mouthrinses: Overview and update. *Biological Therapies in Dentistry* 1994;10. 2. American Dental Association, Survey Center. Survey of consumer attitudes and behaviors regarding dental issues. 1997. 3. Brown LJ, et al. Periodontal status in the United States, 1988-91: Prevalence, extent, and demographic variation. *J Dent Res* 1996;75:672-683. 4. DePaola LG, et al. Chemotherapeutic inhibition of supragingival dental plaque and gingivitis development. *J Clin Periodontol* 1989;16:311-315. 5. Overholser CD, et al. Comparative effects of two chemotherapeutic mouthrinses on the development of plaque and gingivitis. *J Clin Periodontol* 1990;17:575-579. 6. Data on file. CDA, 1998.

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EFFECTIVENESS OF ORAL HYGIENE INSTRUCTION (OHI) WITH OR WITHOUT THE USE OF DISCLOSING SOLUTION

This article discusses the use of disclosing solution when educating patients on effective plaque removal techniques. This has frequently been a hotly debated topic over the years. When I began to practice I admit that I was not a supporter of using disclosing solution. Some reasons where it is too messy, adult patients do not like it; it takes too much time etc. What I have found in the last year especially while working with periodontal compromised patients is that they do like it because it gives them a picture to refer back to when they are attempting to implement the techniques you've shown them. It has been well documented that a patient cannot perceive value for a service if they don't own it. Once a patient sees the disclosed plaque in their own mouths it is virtually impossible for them not to own it.

What I am suggesting is not that you use this as a tool to

embarrass or berate a patient. Rather you look upon this opportunity to educate and inform in a positive manner. I find that once a patient has begun nonsurgical periodontal therapy that they are very motivated (if they are educated about the process) to learn and do their part in stabilizing the progression of their disease. It can also be a great tool for saying "Great Job". Most patients look forward to being disclosed so they can identify problem areas and can problem solve with their dental hygienist how to correct it.

I have now integrated disclosing on a regular basis and I find it a valuable aid in teaching OHI. I disclose all my patients during active therapy and re-evals as well as periodontal maintenance appointments even if there appears to be minimal plaque. I do this because showing the patient how well they are doing in self-care is a great motivator. My advice to other dental hygienists that may not use disclosing is to try it on and evaluate its effectiveness in their practices.

By Gwyn Guilbeault R.D.H.

Clinical Consultant Transitions Consulting Group

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INTRA/EXTRA ORAL EXAMINATIONS

In addition to the letters by Tom Gaines (vol. 34 no. 2) and Ruth Lunn (vol. 34 no. 5), I would like to express the need and importance of developing and implementing a routine for the intra/extra oral examinations.

I was seeing a patient in her mid fifty's for her preventive therapy and as things sometimes happen in a busy day, my routine had been disrupted. At the completion of her appointment I suddenly realized that I had not fully completed her intra/extra oral examination. Before dismissing her I said say "AW", I made her repeat the procedure and completed my examination. She had complained of an ill fitting partial lately, and sensitivity near the 15, as well as recent wait loss. I had noticed a multi-layered lesion in the soft palate region. My heart sank and I left the operatory to regain my composure.

The biopsy revealed my biggest fear – Squamous cell carcinoma.

In memory of my 'mom', Judy Dambremont, I would like to express the utmost importance and necessity in performing this most important exam taking only a few minutes of our time. I would also like to thank my former employers: MLD, MFM, Dr.B, YL, Dr.K, colleagues and dental hygiene instructors: Ann, Nicole and Joanne for providing me with the knowledge and support in providing great oral care. It is a team effort.

My mother succumbed to her disease 20 months later, September 14th, 1998.

I cannot enforce how important it is for us as Health Care Providers to be involved in the early detection of cancer.

By Sally Guy R.D.H., Wahnapiatae, Ontario

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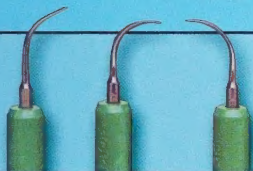


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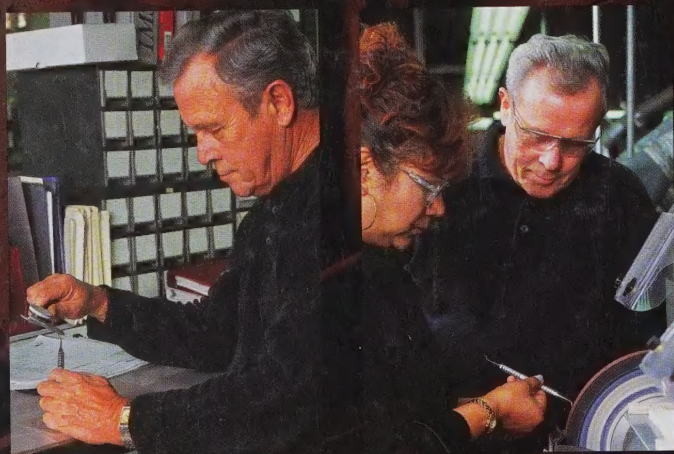
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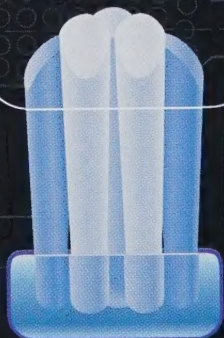
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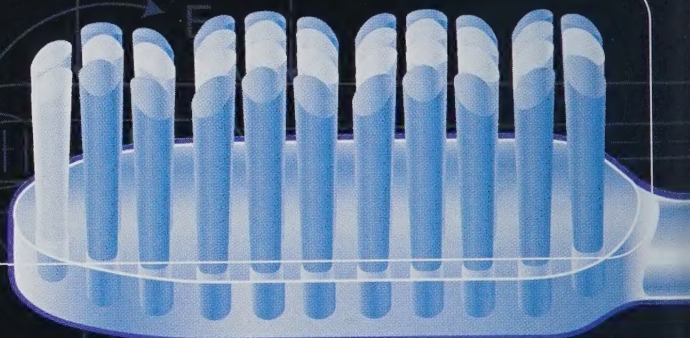
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PRESIDENT'S MESSAGE

LE MESSAGE DE LA PRÉSIDENTE

A Time for Rejuvenation Un temps de rajeunissement

By Salme Lavigne,
RDH, BA, MS(DH)



Par Salme Lavigne,
H.D., BA, M.Sc.(H.D.)

As we witness the emergence of spring, with the first appearance of tulips and daffodils, it is a good time to reflect on how we can grow personally as professionals. I recently drove halfway across this vast country of ours and was struck not only by the beauty and diversity of the landscape but also by the different terrain and people in each province. As dental hygienists, we all follow a different set of rules, which govern how we practice, depending where we live. In some provinces we are able to administer local anesthesia or perform restorative procedures; in others we cannot. In five provinces, we are self-regulated; in the other five provinces and in the territories, we are not. Some have independent practice privileges while most do not. Despite these differences, we are fundamentally the same with a common purpose, to provide the best possible care to our clients through health promotion and disease prevention. To accomplish this goal, we must all rejuvenate ourselves by challenging our minds through continuous learning.

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A TIME FOR REJUVENATION ...continued on page 11

Au fur et à mesure que nous voyons venir le printemps, à l'apparition de ces premières tulipes et des jonquilles nouvelles, c'est peut-être le bon moment pour réfléchir sur la façon dont nous pouvons, au plan personnel, grandir en tant que professionnels. J'ai récemment eu le privilège de traverser en voiture la moitié de notre immense

pays, et j'ai été frappée par la beauté et la diversité du paysage. Cette constatation m'a fait penser à la différence qui sépare chaque province des autres, non seulement dans sa configuration géographique, mais aussi dans sa population. En tant qu'hygiénistes dentaires, nous suivons toutes différentes réglementations, qui régissent notre façon de pratiquer selon l'endroit que nous habitons. Dans certaines provinces, nous avons le droit d'administrer l'anesthésie locale ou d'exécuter des procédures de restauration, dans d'autres, c'est interdit. Dans cinq provinces, nous avons le droit à l'auto-réglementation, mais dans les cinq autres et dans les territoires c'est interdit. Certaines octroient des privilèges de pratique indépendante, mais ce n'est pas le cas de la plupart. Malgré ces différences, nous sommes toutes les mêmes, à la base, avec un but commun, celui de prodiguer à nos clients les soins les meilleurs par le biais de la promotion de la santé et la prévention de la maladie.

UN TEMPS DE RAJEUNISSEMENT ...suite à la page 11

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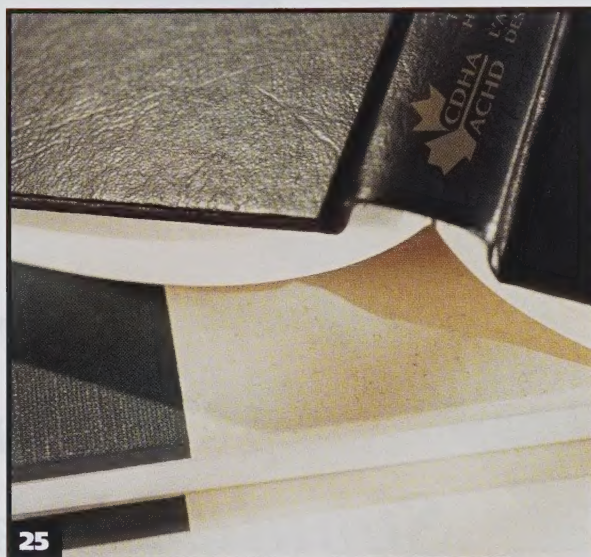
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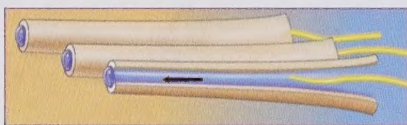
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3. #1 Recommended sensitivity toothpaste by Dentists & Hygienists – Data on file, Block Drug Company (Canada) Ltd.

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Delivery of Local Anesthetics

By Laura MacDonald



In the movie *Wide Awake*, a young boy searches for the answer to the question, "Is there a God?" The movie gives added dimension to the term "wide awake." Sometimes in life, it is as if you have been asleep or at least unaware of something—and sometimes that something is really important. I would like to share an awakening I had on an issue of dental hygiene and quality of care—the issue of delivery of local anesthetic by dental hygienists.

In a previous editorial in *Probe Scientific Journal* (Vol. 34, issue 6), I mentioned that the dental hygiene profession encompasses four concepts: the client, health/oral health, the environment, and dental hygiene actions. The complex relationship among those four concepts results in a multitude of practice philosophies and theories. How we view each concept—through our beliefs and values, judgments, perceptions, and perspective—leads each of us to our practice philosophy. This philosophy directs our actions and thus the quality of care provided by us. However, we do not always have absolute control; sometimes other factors influence our approach to client care. The ability to efficiently provide pain management for clients is an example of a situation where factors external to a person's practice have an effect on that practice.

Dental hygienists without local anesthetic certification need a dentist to provide local anesthetic for their clients when appropriate. For some dental hygienists, could this lead to compromised dental hygiene care for the client (dental hygiene actions) due to waiting for the dentist to provide the anesthetic (the environment)? Dentists, practitioners busy with clients of their own, must be able to excuse themselves from the treatment that they are providing to attend to the needs of the dental hygienist's client. That is a reality. If the waiting period is too long, does the dental hygienist bypass anesthesia and try to provide periodontal debridement without the needed pain management? While not the desired practice, is this "the reality" for some dental hygienists?

Dental hygiene researchers have been asking this question and, because it has been asked, we have some insight into the answer. However, we still don't quite have the picture. A computer search of the literature (Gratefulmed – Medline; 1980-2000; English only) related to the question produced six articles: two on the use of local anesthetic by dental hygienists;^{1,2} two on legislation/licensure for pain control administered by dental hygienists;^{3,4} one on "independent dental hygiene practice and pain control services";⁵

and one looking at the "before and after" effect of taking a local anesthetic course.⁶ From these descriptive studies, it seems that client care may be compromised if the environment does not allow ready access to pain management during dental hygiene care. It also appears that dental hygienists with certification in local anesthetic do employ it in the practice setting. However, in the absence of empirical data (randomized clinical control trials) concerning this question, it cannot be stated that the quality of care provided by dental hygienists with a certificate in local anesthetic to appropriate clients is better than that delivered by dental hygienists without this certification.

I have heard anecdotal stories that the quality of care delivered by the dental hygienist improves when the dental hygienist can administer local anesthetic. This confuses me. Admittedly, I do live and practise in the "ivory tower," so perhaps to some I may be dreaming. I practise one half-day a week in the graduate periodontal practice of our faculty and approximately two days a month in a large residential centre for adults who are mildly to profoundly cognitively impaired. Both experiences are very rewarding, personally and professionally, and keep "my fingers wet," so to speak, in the clinical dental hygiene practice. Possessing the skill to administer local anesthetic certainly improves the efficiency of my practice, but how does it affect the quality of care—the effectiveness and diligence of care?

The dental hygienist who must rely on another clinician to deliver local anesthetic for pain management for their client is in a dependent situation. From these anecdotal stories, there seem to be at least a few frustrated dental hygienists who believe they cannot provide the desired quality of care for their clients because of the practice environment. The dental hygienist in an employee-employer relationship may not be able to change the reality of the practice (the environment). This dictates their quality of care (dental hygiene actions). From my perspective as a teacher, I wonder what happens when students become practitioners in their own right, making and managing decisions as dental hygienists in their practice setting. They graduate with the "ivory tower" approach to care. So what happens in the "real world" that could steer them from this? Why would the quality of care be enhanced because the dental hygienist has acquired the skill and scope of practice to administer local anesthetic? Is efficiency of one's practice being confused with quality of care?

A randomized clinical control study needs to be conducted that puts forth the hypothesis: "post-graduate licensing of dental hygienists to administer local anesthetic would not cause the dental hygienist to modify the periodontal debridement provided to their clients." Quantitative and qualitative approaches would be required. An example would be examining the behaviours and perceptions of the

DELIVERY OF LOCAL ANESTHETICS ...continued on page 31

EXECUTIVE DIRECTOR'S MESSAGE

MESSAGE DE LA DIRECTRICE GÉNÉRALE

What We Give

By Susan A. Ziebarth
CDHA, Executive Director

"Destiny is not necessarily what we get out of life, but rather, what we give."

—Cary Grant

I count myself fortunate to find myself associated with such caring people who work hard to advance the dental hygiene profession and dental hygiene—so important to the health and well-being of Canadians. Of course I knew dental hygiene was beneficial before I joined this organization in November but I did not realize the impact such hygiene has on the health of the public. Over the years, much volunteer effort has been given to the Canadian Dental Hygienists Association (CDHA) and the provincial associations in order to promote the profession, with much success. It is now my role, as facilitator for the National Board of Directors of CDHA, to help you continue to increase the public's knowledge and appreciation for what you do every day.

Examples of your achievements are featured in this issue of *Probe* with highlights of National Dental Hygiene Week™ (NDHW™) projects from across the country. Oral B sponsored a contest designed to promote the Week and CDHA thanks both Oral B as well as the participants. Now you can start thinking how to let your communities know dental

À VENIR EN MAI...

Étude sur les hygiénistes dentaires au Canada

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PROFILE 2001

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enter the next NDHW™ contest and share your ideas and successes with your colleagues.

Over the next year, we will be asking you for information and advice. In this issue is an announcement of a new professional study, the Canadian Dental Hygienist Study—Profile 2001, an extensive review of the profession led by Dr. Patricia Johnson with joint funding by CDHA and



Susan A. Ziebarth
CDHA, Executive Director

Ce que nous donnons

Par Susan A. Ziebarth
ACHD, directrice générale

"La Destinée n'est pas nécessairement ce que nous tirons de la vie, mais plutôt ce que nous donnons." —Cary Grant

Je me considère chanceuse de me retrouver associée à des personnes si attentives, qui travaillent d'arrache-pied à l'avancement de la profession de l'hygiène dentaire et de l'hygiène dentaire, si importantes pour la santé et le bien-être des Canadiens. Bien sûr, je connaissais les bienfaits de l'hygiène dentaire avant de me joindre à cet organisme, en novembre, mais je ne réalisais pas l'impact qu'a l'hygiène dentaire sur la santé du public. Au fil des années, beaucoup d'efforts bénévoles ont été donnés à l'Association canadienne des hygiénistes dentaires (ACHD) et aux associations provinciales afin de faire la promotion de la profession, avec beaucoup de succès. C'est maintenant mon rôle, en tant qu'animatrice pour le Conseil national des directeurs de l'ACHD, de vous aider à continuer à informer le public et à lui faire apprécier votre travail quotidien.

Dans ce numéro de *Probe*, nous donnons des exemples de vos réussites, en mettant l'accent sur les projets de la Semaine nationale de l'hygiène dentaire^{MD} (SNHD^{MD}) et l'intérêt qu'elle suscite dans tous les coins du pays. Oral-B a parrainé un concours conçu pour faire la promotion de la Semaine, et l'ACHD remercie Oral-B ainsi que les participants. Maintenant vous pouvez penser à informer votre collectivité du fait que les hygiénistes dentaires travaillent dans les soins de santé bucco-dentaire depuis 50 ans, un demi-siècle! Ensuite, assurez-vous de participer au prochain concours de la SNHD^{MD} et partagez vos idées et vos succès avec vos collègues.

Au cours de la prochaine année, nous allons vous demander des renseignements et des conseils. Dans ce numéro, vous trouverez l'annonce d'une nouvelle étude professionnelle; "l'Étude sur l'hygiène dentaire au Canada, Profil 2001," un examen approfondi de la profession dirigé par la Dre Patricia Johnson et financé conjointement par l'ACHD et Développement des ressources humaines Canada (DRHC). Nous vous demandons d'y participer en grand nombre. Le fait de pouvoir quantifier l'information touchant à la pratique de l'hygiène dentaire est une des principales façons d'aider à l'établissement de la profession. Au cours des prochains mois, DRHC nous aidera également à élaborer une étude sur les ressources humaines dans le

Human Resources Development Canada (HRDC). Please participate as being able to quantify information about the practice of dental hygiene is a key way to help establish the profession. In the next few months, HRDC will also assist us in the development of an Oral Health Care Human Resources Study that will look at the supply and demand issues with respect to all of the providers of oral health care. This will be an important study in formulating a national oral health policy.

In addition, we will be contacting some of you to help us build a truly interactive web site, one in which you are a participant and not just a viewer.

We are also examining the best way to find out from you what your priorities are; compensation is certainly one of the top items. We have contracted with Dr. Pran Manga to study the political economy of dental hygiene. Other projects include working with the provincial associations to develop a coordinated plan to better relate to insurance companies, employer groups, and the government.

This is an exciting time in your evolving profession. I have been made to feel most welcome and for that I thank you. I look forward to joining you in letting Canadians get better acquainted with the great asset they have in dental hygienists.

domaine des soins de santé buccodentaire, qui examinera les enjeux liés à l'offre et à la demande à l'égard de tous les prestataires de santé buccale. Il s'agira d'une étude importante pour la formulation d'une politique nationale en matière de santé buccale.

En plus, nous allons communiquer avec certains d'entre vous pour vous demander de nous aider à mettre sur pied un site web véritablement interactif, où vous n'êtes pas seulement spectateur, mais participant.

Nous examinons également la meilleure façon d'obtenir de vous quelles sont vos priorités; la rémunération est certainement un des premiers éléments sur la liste. Nous avons communiqué avec Dre Pran Manga pour étudier l'économie politique de l'hygiène dentaire. Parmi les autres projets, en liste on retrouve celui de collaborer avec les associations provinciales afin d'élaborer un plan coordonné pour améliorer le rapport avec les compagnies d'assurance, les groupes d'employeurs et le gouvernement.

C'est une période exaltante dans votre profession en pleine évolution. Je vous remercie de m'avoir si bien accueillies et j'anticipe avec plaisir de me joindre à vous pour renseigner les Canadiens sur l'atout que représentent les hygiénistes dentaires.

A TIME FOR REJUVENATION *(continued from page 3)*

in a more remote area has become less of a concern. The emergence of dental hygiene study clubs also provides another venue for continuous, lifelong learning as well as accessing journal articles on the internet. This is a vast improvement from just a decade ago when the only option was attendance at a conference or a continuing education course.

With all of these educational options, one would think that all dental hygienists would be quite current and practise in an evidence-based fashion. Unfortunately, this is not always the case. Mandatory continuing education is required in most provinces; however, there are still a few provinces where this is not a licensing requirement. As professionals, we should view it as our personal responsibility to continue to learn despite what the regulations mandate. However, there are colleagues who have not attended a continuing education course since the day they graduated!

The rationale for such behaviour has always been a mystery to me. Moreover, it is interesting that, in jurisdictions with mandatory continuing education, there is solid evidence that participation in continuing education courses does not necessarily result in a behaviour change. With this in mind, I ask you how we can motivate ourselves to be the very best we can be and, most importantly, to provide the best possible care to our clients.

The current movement within both dental and dental hygiene education is toward an evidence-based curriculum. This means that students are now expected to provide justification for their dental hygiene interventions through evidence, preferably Level 1. So what does that mean?

UN TEMPS DE RAJEUNISSEMENT *(suite de la page 3)*

Pour atteindre ce but il ne fait pas de doute que nous devons toutes nous rajeunir continuellement en nous nourrissant l'esprit au moyen de l'apprentissage continu.

Il existe maintenant plus de façons que jamais d'avoir accès à de nouvelles connaissances. Avec l'accessibilité des cours d'éducation continue grâce au web et à une variété de formes d'éducation à distance, le fait de vivre dans un endroit éloigné n'est plus aussi problématique que ce ne l'était naguère. L'apparition de clubs d'étude en hygiène dentaire offre également un autre terrain propice à l'apprentissage pour la vie, tout comme l'accès à des articles de revues sur l'Internet. Il s'agit là d'une énorme amélioration, à comparer à il y a à peine dix ans, alors que le seul choix qui semblait s'offrir était d'assister à une conférence ou à un cours d'éducation permanente.

Avec toutes ces options à notre disposition, on croirait que toutes les hygiénistes dentaires seraient bien au fait dans leurs connaissances et qu'elles auraient une pratique fondée sur l'expérience clinique. Mais ce n'est malheureusement pas toujours le cas. L'éducation permanente obligatoire est exigée dans presque toutes les provinces, mais il en reste encore quelques-unes où cette obligation n'est pas liée aux exigences relatives à l'octroi d'un permis de pratique. On pourrait penser que, comme professionnelles, nous trouverions qu'il en va de notre responsabilité de poursuivre notre apprentissage, quelles que soient les obligations que nous imposent les règlements, mais ils se trouvent des collègues qui n'ont pas assisté à un cours d'éducation permanente depuis le jour où elles ont reçu leur diplôme !

We are fundamentally the same with a common purpose, to provide the best possible care to our clients through health promotion and disease prevention.

Evidence-based research is categorized according to its strength and validity. Level 1 is the highest level of evidence and is in the form of a randomized, controlled clinical trial. Level 2 evidence might be obtained from well-designed controlled studies without randomization, from well-designed cohort or case-control analytical studies, or evidence obtained from comparisons between times or places without the intervention. Level 3 would include systematic literature reviews, descriptive studies, opinions of respected authorities based on their clinical experience, or reports of expert committees. Sources such as textbooks, case reports, and non-data based research are not typically considered good sources of evidence unless they include systematic reviews of the literature with several Level 1 studies cited.

I realize that most of us do not think about these things with any form of seriousness. However, remember that change is an integral part of being a professional. Believing everything that you hear—whether through a continuing education course or from a product sales representative—or believing everything you have read in a journal is a dangerous thing. We must receive all information with a certain amount of healthy skepticism. If the source of information is credible, there should be a substantial amount of Level 1 evidence either cited or quoted.

The more you practise doing this, the more confident you will become in interpreting the literature. The rewards will be many as you realize that you are indeed providing the best care possible to your clients. This nourishes not only the mind, but the soul.

So, as you watch those tulips bloom this spring, think about how you too can emerge as a rejuvenated professional. Remember, it is your professional responsibility to continue to learn, grow, and change.

Salme Lavigne received her Diploma in Dental Hygiene from the University of Toronto, her Baccalaureate degree in Biomedical Anthropology from Lakehead University, a certificate in Periodontal Therapy from Northern Arizona University and her Master of Science degree in Dental Hygiene Education from the University of Missouri-Kansas City. Salme has extensive experience in both private practice and in dental hygiene education in both Canada and the US. She is currently Director of the School of Dental Hygiene at the Faculty of Dentistry, University of Manitoba. Her main interests are in periodontics and local anesthesia.

La raison d'être d'un tel comportement m'est toujours apparue comme un mystère. L'autre fait intéressant, c'est que, dans les provinces où il y a éducation permanente obligatoire, il a été clairement démontré que la participation à des cours d'éducation permanente ne se traduit pas nécessairement en un changement de comportement. Avec cette idée en tête, je vous demande comment nous pouvons nous motiver à nous maintenir à notre mieux et, ce qui est plus important encore, comment prodiguer à nos clients les meilleurs soins possibles ?

Le mouvement actuel de l'éducation en santé dentaire et en hygiène dentaire se tourne vers un programme d'études fondé sur l'expérience clinique. Cela signifie que les étudiants doivent s'attendre à justifier leurs interventions en hygiène dentaire au moyen, de préférence, d'une expérience clinique de niveau 1. Qu'est-ce que cela veut dire ? La recherche à base d'expérience clinique est classifiée en fonction de sa force et de sa validité. Le niveau 1 d'expérience clinique, le plus élevé, se présente sous la forme d'un essai clinique aléatoire contrôlé. Le niveau 2 pourrait être obtenu à partir d'études contrôlées bien conçues sans élément aléatoire, ou d'études analytiques bien conçues de cohortes ou de contrôle de cas, ou obtenues de comparaisons entre des moments et des lieux où il n'y a pas eu intervention. Le niveau 3 comprendrait des dépouillements systématiques de publications, des études descriptives, les opinions d'autorités respectées basées sur leur expérience clinique ou des rapports de comités d'experts. Les sources comme les manuels scolaires, les rapports de cas et la recherche non fondée sur des données ne sont pas ordinairement considérées comme de bonnes sources d'expérience clinique, à moins qu'elles ne comportent des dépouillements systématiques de publications, avec citation de plusieurs études de niveau 1.

Je me rends compte que la plupart d'entre nous ne réfléchissent pas à ces choses avec une forme quelconque de sérieux. Mais pensez que le changement devrait faire intégralement partie de l'être professionnel. Il est dangereux de croire tout ce qu'on vous dit, que ce soit dans un cours d'éducation permanente, de la bouche d'un représentant vendeur de produits, ou quelque chose que vous avez lu dans une revue ! Nous ne devons pas oublier de recevoir toute information avec une pincée de sain scepticisme. Si la source d'information est digne de foi, elle devrait mentionner ou citer une quantité substantielle d'expérience de niveau 1.

Plus vous pratiquez cette façon de faire, plus vous aurez d'assurance devant l'interprétation de la littérature. Vous serez récompensés plusieurs fois lorsque vous réaliserez que vous prodiguez, de fait, les meilleurs soins possibles à vos clients. Cette pensée nourrit non seulement l'esprit, mais aussi l'âme !

Alors, en regardant fleurir les tulipes ce printemps, pensez à la façon dont vous pouvez, vous aussi, fleurir en tant que professionnelle rajeunie. N'oubliez pas qu'il en va de *votre responsabilité* professionnelle de continuer à apprendre, à croître et à changer !

Now That's Something to Smile About!

EVERYONE WAS A WINNER DURING NDHW™ 2000

Phantom smiles, artwork from the young and the young-at-heart, poetry, contests, books, and prizes galore.

That's what makes a good National Dental Health Week promotion according to Darlene Lonseth, RDH, of Rocanville, Saskatchewan. Darlene's creative ideas, never-ending supply of enthusiasm, and a bit of good luck have netted her top honours in the Oral-B NDHW™ 2000 Contest.

Oh, and did we mention the \$1,000 cheque?

WINNERS, WINNERS EVERYWHERE

The submissions were judged against a host of criteria including community impact, partnerships that were created, educational elements, and planning. Winners were first selected in three categories—individual, clinic, and school. A random draw was then held to determine the overall winner.

That would be Darlene.

The winner in the school category was the University of Manitoba with its event called the Mouth–Body–Health Connection. In the clinic category, the Mission Dental Hygiene Clinic in Kelowna took top spot for its multimedia approach to tongue scraping.



WHAT TO DO, WHAT TO DO...

We figured Darlene must have started planning her events back in the mid-1980s, given how much she accomplished in one week.

At the local seniors' home, Darlene had participants draw pictures of their grandchildren's smiles and write messages about keeping a healthy smile. Meanwhile, the youngsters

CDHA Awarded Federal Grant

CDHA has been awarded a grant through Human Resources Development Canada (HRDC) to support a study of dental hygienists. The study will be conducted through PMJ Consultants and York University. The Profile 2001 Advisory Committee includes Judy Clarke, Sandra Cobban, Wendy King, and Dianne Landry. Patricia M. Johnson is Principal Investigator.

WHAT?

The study will examine characteristics of dental hygienists in Canada, including education, professional development, work environments, job and career satisfaction, and work patterns, with an emphasis on clinical practice. Patterns and relationships will be investigated. Information from a previous CDHA survey will be used to examine changes since 1987. Results will assist in planning oral healthcare human resource requirements and future dental hygiene initiatives.

WHO?

A stratified random sample of dental hygienists across all provinces and territories will be surveyed. If you receive one of the comprehensive questionnaires, please respond as completely and quickly as possible. Your input on each of the issues addressed is vital. All responses will be completely confidential and anonymous; data will be available in aggregate form only.

WHY?

With changing patterns and trends in the characteristics of the Canadian population, the role of the dental hygienist is of increasing importance. Lack of current information on the profession limits program planning and development. The information you provide will be used to represent dental hygienists' professional interests and to plan improved access to, and cost-effectiveness of, the provision of essential oral healthcare services.

at Rocanville's elementary school were given sheets on which they—you guessed it—drew pictures of their grandparents' smiles. They, too, wrote messages that started with "Keep your smile healthy by..."

Because NDHW™ 2000 coincided with Saskatchewan Library Week, it was a terrific opportunity for cross-promotion. For starters, all the artwork submissions were displayed at the local library branch. Winners garnered some hard-earned publicity in the local press as well as baskets filled with candy, soda pop, toffee, and chewing gum. Hey, we're just kidding! They received the baskets, all right, but they were filled with toothpaste, dental floss, lip balm, and denture cleaner. Two electric toothbrushes—donated by dental suppliers and the Saskatchewan Dental Association—were given to the winners.

Under the title of "Bridging the Gap," Darlene and the local librarian also teamed up to put together displays of dental books, toothbrushes, and dental aids.

If you think that's all she did, you obviously don't know Darlene Lonseth. She was just getting started!

She also "borrowed" smiles by having the librarian photograph just the smiles of local business people and then post the pictures at the library along with a list of names. Visitors were invited to match the smiles with the names. For promotion, she displayed this poem at the local post office:

Whose smiles are they?
I think I know
Off to work, in town they go
Their friends, they all might see them clear
And recognize those smiles so dear
So come down to the library and have a look
See some smiles and borrow a book!

The week ended with the seniors reading to children at the library during story time. This was when Darlene took the opportunity to spread the good word about being a dental hygienist while, using a chair borrowed from her dentist, giving the children rides. The kids, who were given balloons handed out by the seniors, left not only smiling, but also a little bit more knowledgeable about good dental hygiene.

U OF M TARGETS AT-RISK GROUP AND CLAIMS TOP SPOT IN SCHOOL CATEGORY

Knowing there are many unmet oral health needs among those living in long-term care facilities, Mickey Wener and Laura Lee MacDonald from the University of Manitoba's School of Dental Hygiene set out to make a difference. Their objectives were to raise awareness, not only of the issue, but also of the serious consequences of neglecting good oral hygiene. They also wanted to arm caregivers with the knowledge they needed to be effective advocates.

Six months in the planning, the full-day event was put together with the help of several people and the financial support of both the University of Manitoba and the Manitoba Dental Hygienists Association. This funding enabled the event coordinators to allow free registration.

L'ACHD reçoit une subvention fédérale

L'ACHD a reçu une subvention par l'entremise de Développement des ressources humaines Canada (DRHC), à l'appui d'une étude sur les hygiénistes dentaires. Cette étude sera effectuée grâce à Consultants PMJ et à l'Université York. Le Comité consultatif Profil 2001 se compose de Judy Clarke, Sandra Cobban, Wendy King, et Dianne Landry. Patricia M. Johnson est la directrice de la recherche.

DE QUOI S'AGIT-IL ?

L'étude examinera les caractéristiques des hygiénistes dentaires au Canada, et notamment l'éducation, le développement professionnel, les milieux de travail, la satisfaction vis-à-vis l'emploi et la carrière, et les structures de travail, en mettant l'accent sur la pratique clinique. Les modèles et les relations feront l'objet de la recherche. Les renseignements provenant d'un précédent sondage de l'ACHD serviront à examiner les changements survenus depuis 1987. Les résultats seront utiles pour planifier les besoins en ressources humaines du domaine des soins de santé buccale et les futures initiatives dans le domaine de l'hygiène dentaire.

QUI SERA TOUCHÉ ?

La recherche portera sur un échantillon aléatoire stratifié des hygiénistes dentaires de toutes les provinces et territoires. Si vous recevez un de ces questionnaires détaillés, nous vous prions de bien vouloir y répondre le plus complètement et le plus rapidement possible. Les commentaires que vous ferez sur chacun des enjeux touchés sont d'une importance vitale. Tous les réponses seront tenues sous le sceau de la confidentialité et de l'anonymat; les données ne seront publiées que sous forme de sommaire.

POURQUOI ?

Avec les changements des modèles et des tendances dans les caractéristiques de la population canadienne, le rôle de l'hygiéniste dentaire prend une importance accrue. Le manque d'information actuelle sur la profession est une entrave à la planification et au développement. Les renseignements que vous fournirez serviront à la représentation des intérêts professionnels des hygiénistes dentaires et à la planification d'un meilleur accès, ainsi qu'à établir un rapport coût-efficacité, aux services essentiels de soins de santé buccale.

The 175 registrants saw student-developed health displays and had the chance to talk to senior students. They also were given the opportunity to attend a one-hour plenary session where experts discussed the importance of oral hygiene for those in long-term care. The displays covered everything from how a healthy mouth mirrors a healthy life, to daily mouth care for those without teeth.

As well as taking home conference-related material such as sample products and a booklet with information from every display, everyone in attendance gained valuable information, not the least of which was that dental hygienists are mouth-care experts.

TONGUE SCRAPING PROMOTION GOES MULTIMEDIA AND WINS FIRST PLACE IN CLINIC CATEGORY

On the Friday before NDHW™, it was on the radio; on Sunday it was in the local newspaper; on Wednesday the message was delivered live and in person at an open house in the afternoon and on the local television station that night.

The message: regular tongue scraping should be part of your daily routine.

The dental hygienists behind the public relations? Arlynn Brodie and her colleagues at the Mission Dental Hygiene Clinic in Kelowna, British Columbia.

And if all that publicity wasn't enough, the Mighty Molar—a young volunteer dressed for the part—greeted drive-home traffic mid-week armed with a smiley-face sign that proclaimed: "It's Dental Hygiene Week!"

NEED MORE IDEAS?

Here are a few good ones from contest participants:

- Susan Salvatori-Kaufman of Elmwood, Ontario, spent 15 minutes with each class at the local elementary school talking about a dental hygienist's work and how to keep your teeth healthy.
- Monique Vezeau-Lyons, a second-year dental hygiene student at Cambrian College in Sudbury, Ontario, reports that her classmates and teachers had a hectic week staffing a booth in the campus's main lobby. Material handed out included everything from smoking-cessation packages to presentations on how to conduct oral cancer self-screening exams.
- Monica Maletz, RDH, was a guest speaker at the B.C. dieticians' professional conference for the Gerontology Nutritional Society of B.C., where she spoke about dental problems in long-term care.
- The students in the dental hygiene program at St. Clair College in Windsor, Ontario, designed table displays that provided information on everything from the role of the dental hygienist to the effect of cheese on dental health.
- The South Shore component of the Nova Scotia Dental Hygienists Association held a mall display and tooth-brush exchange.

- Lisa-Marie Martin, RDH, of Aurora, Ontario, reports that her practice held a draw for its clients—the winner took home an electric toothbrush.
- Suzanne Lebrun published an article in the *Yellowknifer*, stressing the importance of dental hygiene.
- Nancy-Jo Demers of Sudbury, Ontario, put out the call to every supplier she knew. Armed with hundreds of samples of toothbrushes, mouthwash, toothpaste, floss, and other dental items, she then took a day and a half off work to blitz the community handing out goodie bags. She targeted two mature-adult clubs, three elementary schools, the high school, the daycares, and the challenged-adults group.
- Veronica Plowman McConaghy and friends organized a continuing-education day at the Grace Maternity Hospital in Halifax that covered topics such as the care of dental implants, aging, infection control, breast cancer, and teeth whitening.
- P. Dailly-Armstrong visited her son's kindergarten class with Kyle the Crocodile, a child-friendly dental education device. The kids took turns brushing Kyle's teeth and everyone took home a tooth-shaped picture with "brush and floss me" written on it.
- Veronica HerMiston, a dental hygienist in rural Wynyard, Saskatchewan, promotes oral health all year round with visits to nursery and elementary schools and a puppet show called "A Walk with Franny Flossasaurus."
- Karen Flynn celebrated NDHW™ and raised \$1,700 for a good cause by registering a team of friends and colleagues in the Run for the Cure event in support of breast-cancer research.
- In Cilla Watkins' office in Mississauga, Ontario, office colleagues built a scarecrow using a dental hygienist scrub uniform stuffed with straw. Before each appointment, the clients were introduced to Dental HY-Janice and were informed that it was National Dental Hygiene Week.
- The second-year dental hygiene students at Dalhousie University's School of Dental Hygiene developed and presented mall displays throughout the Halifax Regional Municipality over the course of the week. The displays promoted oral health and the profession of dental hygiene.
- Students at the University of Alberta hosted a booth at the Students' Union Building under the slogan "Bring Your Smile to Our Clinic!"

LET'S DO IT AGAIN!

Thank you for all of your submissions—there are some great ideas here for this coming year. Speaking of which... Stay tuned for the upcoming announcement of the NDHW™ 2001 Contest. Many respondents to our contest told us that they began planning their events as early as the spring, so you may want to start thinking now about how you can bring the good news to your community. And good luck in 2001!



Campaign Report

CELEBRATING 50 YEARS OF SERVICE TO CANADIANS

The CDHA is finalizing plans for a very exciting year. After all, it's not every year you get to celebrate a half-century of service to the Canadian public! The 2001 National Communications Campaign promises to mark the 50th anniversary of the dental hygiene profession in Canada in an important and memorable way.

This year's activities involve a national television ad campaign, a nation-wide contest to uncover Canada's healthiest mouths, new material for your Campaign Planning Kit, and a commemorative 16-month calendar.

The television ads will be produced in both English and French and will be broadcast nationally on CBC *NewsWorld* and *RDI* during health-related programming such as *Health Matters* and *Découvertes*. The ads will demonstrate the important relationship between dental hygienists and their patients. They will run for two months—September and October 2001—to coincide with our Annual Conference and National Dental Hygiene Week™ (NDHW™).

We will also undertake an exciting national contest to identify Canada's 50 healthiest mouths. Dental hygienists will be asked to nominate and vote on winners in various categories (such as athlete, politician, news reporter, actor). Canadians will then pick from the top-10 list to choose one as the people's choice winner. Calls for nominations will

appear in the next issue of *Probe* and will soon appear on the CDHA's web site as well. The contest will be supported by media relations, because once we know who the winners are, we're going to make this *news*!

Another special feature of Campaign 2001 is the development of a 16-month 50th anniversary calendar for all current and past members, as well as students. Each of you will receive your calendar in the September issue of *Probe*. The calendar will look to the past, present, and future of our profession and will pay special tribute to the pioneers of dental hygiene in Canada.

Last year we developed the Campaign Planning Kit, *A guide to promoting National Dental Hygiene Week™*. The kit was tailored for each province and provides easy-to-use information and tips on how to make the most of the Week. The kit is intended to be modular, so it can grow each year. This year we will be adding a new set of tips and tools you can use to promote the Week in your community. If you don't already have your kit, we encourage you to visit the CDHA's web site <www.cdha.ca> and download it, or simply call 1-800-267-5235 for more information.

The 50th anniversary will also be celebrated with two special events: the Annual Conference in September and, of course, National Dental Hygiene Week™ (NDHW™).

Our 12th Annual Professional Conference is being held in Mississauga, Ontario from September 21–23, 2001. This event will be an opportunity for members from coast to coast to celebrate the anniversary together. We encourage everyone to attend! Look for details on the Annual Conference in the next issue of *Probe* and in the Events and Conferences section of the CDHA's web site.

NDHW™ takes place from October 14–20, 2001. The theme for this year's NDHW™ is the 50th anniversary of our profession in Canada and the slogan, therefore, is "Celebrating 50 years of service to Canadians." There is no better time to share with Canadians all we do to help them keep talking, smiling, and laughing for a lifetime. We encourage you to start thinking now about the NDHW™ activities you will undertake in your community. If you're looking for creative ideas, members share their activities from NDHW™ 2000 in this issue of *Probe*.

As you can see, we plan to have some fun this year. After all, this is an important landmark for all dental hygienists in Canada. Our campaign goals, however, remain consistent:

- to enhance the recognition of dental hygienists as true health professionals
- to increase the public's understanding of the health benefits that dental hygienists offer
- to lay the foundation for a new regulatory environment that removes barriers to independent practice

We hope you will take the opportunity to enjoy and participate in the activities planned to mark the 50th anniversary. Our issues are important, our contributions significant, and there's never been a better time to share with Canadians all we do to promote healthy mouths and healthy bodies.

Rapport sur la campagne

LA CÉLÉBRATION DE 50 ANS DE SERVICE À LA POPULATION CANADIENNE

L'ACHD en est à mettre la dernière main aux préparatifs d'une année qui s'annonce fort emballante. Après tout, ce n'est pas à tous les ans que nous célébrons un demi-siècle de service à la population canadienne! La campagne nationale de communication 2001 promet de souligner le 50^e anniversaire de la profession d'hygiéniste dentaire au Canada de manière importante et mémorable.

Les activités de cette année comprendront une campagne publicitaire nationale télévisée, un concours national visant à trouver les bouches les plus en santé au pays, la nouvelle documentation relativement à votre trousse de planification de la campagne, ainsi qu'un calendrier commémoratif de 16 mois.

Les messages télévisés seront produits en français et en anglais et seront diffusés sur les ondes de RDI et de CBC Newsworld pendant les émissions touchant la santé, telles *Découvertes* et *Health Matters*. Les messages illustreront l'importance de la relation entre les hygiénistes dentaires et leurs patients. De plus, ils seront diffusés pendant deux mois - en septembre et octobre 2001 - afin de coïncider avec notre conférence annuelle et la Semaine nationale de l'hygiène dentaire^{MC} (SNHD^{MC}).

Nous lancerons également un concours national captivant visant à trouver les 50 bouches les plus en santé au Canada. Les hygiénistes dentaires seront appelé(e)s à sélectionner les candidats et à choisir les gagnants répartis dans diverses catégories (tels les athlètes, les politiciens, les journalistes, les acteurs). La population canadienne sera ensuite appelée à choisir parmi la liste des 10 finalistes. Les appels de mises en candidature seront publiés dans la prochaine édition de *Probe* et seront bientôt affichés sur le site Web de l'ACHD. Le concours sera appuyé par des relations avec les médias, car dès que les gagnants seront connus, nous en ferons un *sujet d'information*!

Une autre caractéristique particulière de la campagne de 2001 porte sur la création d'un calendrier de 16 mois soulignant le 50^e anniversaire. Celui-ci sera distribué parmi tous les membres actuels et anciens, de même que chez les étudiant(e)s. Chacun(e) d'entre-vous recevrez votre calendrier dans l'édition de septembre de la revue *Probe*. Le calendrier jettera un regard sur le passé, le présent et l'avenir de notre profession, en plus de rendre un hommage spécial aux pionniers et aux pionnières du domaine de l'hygiène dentaire au Canada.

L'an passé, nous avons conçu la trousse de planification de la campagne : *un guide pour la promotion de la Semaine nationale de l'hygiène dentaire*^{MC}. Cette trousse a été adaptée à chaque province et contenait des renseignements et des conseils pratiques sur la façon de tirer le maximum de la Semaine. Cette trousse est conçue de façon modulaire, de sorte qu'elle puisse prendre de l'ampleur chaque année. En

2001, nous y ajouterons un nouvel ensemble de conseils et d'outils que vous pouvez utiliser afin de promouvoir la SNHD^{MC} dans votre collectivité. Si vous n'avez pas votre trousse, nous vous invitons à visiter le site Web de l'ACHD <www.cdha.ca> afin que vous puissiez la télécharger, ou composez simplement le 1-800-267-5235 pour obtenir votre exemplaire.

Deux activités spéciales feront également partie des célébrations du 50^e anniversaire : la conférence annuelle prévue en septembre et, bien sûr, la Semaine nationale de l'hygiène dentaire^{MC} (SNHD^{MC}).

Notre 12^e conférence professionnelle annuelle aura lieu à Toronto du 21 au 23 septembre 2001. Cette rencontre donnera la chance aux membres d'un océan à l'autre de célébrer cet anniversaire en compagnie de leurs collègues. Tous et toutes sont invité(e)s à y prendre part! De plus amples renseignements sur la conférence annuelle seront publiés dans la prochaine édition de *Probe*, ainsi que dans la section Expositions et conférences du site Web de l'ACHD.

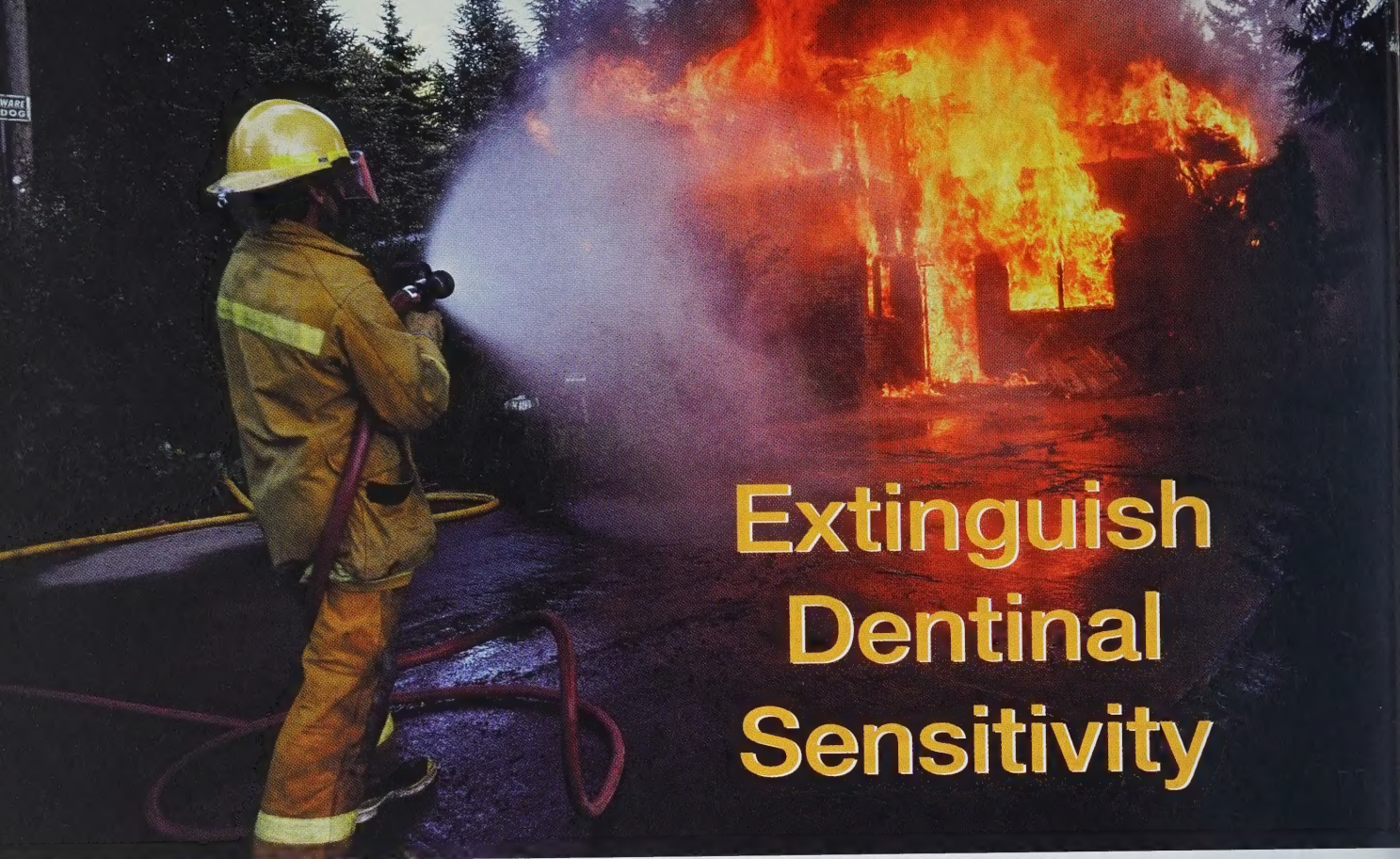
Les activités atteindront leur point culminant à la 12^e conférence professionnelle annuelle de l'ACHD qui aura lieu à Toronto du 21 au 23 septembre 2001 et qui sera remplie de surprises. Nous espérons que vous assisterez à la conférence professionnelle annuelle afin que nous puissions célébrer ensemble ce moment historique de notre profession.

La SNHD^{MC} se tiendra du 14 au 20 octobre 2001. Le thème de la SNHD^{MC} portera sur le 50^e anniversaire de notre profession au Canada et, comme il se doit, le slogan est le suivant : *50 ans de service à la population canadienne*. Il n'y a pas de meilleur moment pour partager avec la population canadienne ce en quoi consiste notre travail afin que chacun puisse continuer à parler, à sourire et à rire la vie durant. Nous vous incitons à commencer à songer dès maintenant aux activités de la SNHD^{MC} que vous mettrez sur pied dans votre collectivité. Si vous recherchez des idées créatrices, nos membres traitent des activités qu'ils ont tenues au cours de la SNHD^{MC} de l'an 2000 dans cette édition de *Probe*.

Comme vous pouvez le constater, nous comptons avoir beaucoup de plaisir cette année. Après tout, il s'agit d'une étape importante pour notre profession. Toutefois, les objectifs de notre campagne demeurent inchangés :

- accroître la reconnaissance des hygiénistes dentaires comme étant de véritables professionnels de la santé;
- informer davantage la population sur les avantages que présentent les hygiénistes dentaires pour la santé;
- établir les bases d'un nouveau milieu de réglementation en vue d'éliminer les obstacles à la pratique privée.

Nous espérons que vous profiterez de l'occasion et prendrez part aux activités de notre 50^e anniversaire. Nos intérêts sont importants, nos contributions sont significatives et il n'y a jamais eu de meilleur moment pour partager avec la population canadienne tout ce que nous faisons afin de promouvoir la santé buccodentaire dans un corps sain.



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Baccalaureate Dental Hygiene Education

by Sandy Cobban RDH, MDE



Sandy Cobban

ABSTRACT

Dental hygiene practice is grappling with change as it adapts to the rapidly evolving healthcare delivery system and the needs associated with changing client demographics. Dental hygiene

education must respond to the changing needs of its graduates. Dental hygienists and the Canadian Dental Hygienists Association see a need for increasing access to baccalaureate degree dental hygiene education in Canada. In this paper, existing models of baccalaureate dental hygiene education are reviewed, and issues surrounding access to baccalaureate education and the articulation between diploma and degree programs are discussed. A proposed meaning for baccalaureate dental hygiene education is suggested. The Canadian Dental Hygienists Association's Policy Framework for Dental Hygiene Education in Canada has provided the conceptual framework for this discussion. This organization intends to have a baccalaureate degree as the required credential for entry to dental hygiene practice for all new students commencing in 2005. The author suggests that it is time for Canadian educational institutions to provide greater opportunities to meet the educational needs of dental hygiene professionals in this country.

Key words: dental hygienists, education, baccalaureate

content to address the many changes. However, the credential awarded has not always been consistent with the amount of education required by the program.²

Oral health makes an important contribution to wellness, and dental hygienists are prepared educationally to help people achieve optimal oral health. The healthcare delivery system is undergoing reform, although much of this effort has been directed at financial restructuring rather than the specific professional roles in healthcare delivery.

Suggestions have been made for the emergence of the dental hygienist as a primary healthcare provider,^{3,4} and practising in different settings with different supervision requirements.⁵ The authors have suggested that education to at least the baccalaureate level would be necessary to prepare the dental hygiene practitioner for such roles.

The dental hygiene diploma is currently the entry credential for practice across Canada and the United States. In the last published report, only 5% of Canadian hygienists with additional educational qualifications reported having a bachelor's degree in dental hygiene.⁶ This cited reference may appear old but it is all that currently exists; there is a dearth of published literature on characteristics of Canadian dental hygienists. Various provincial regulatory bodies collect such data for their own purposes, but not in a format that may readily be aggregated.

DENTAL HYGIENE EDUCATION IN CANADA

There are 29 dental hygiene programs at present in Canada. The majority are diploma programs, delivered at colleges and universities across Canada. Most are two-year programs, but those offered in Quebec are three-year programs. University diploma programs in Nova Scotia and Manitoba have a pre-professional year of studies as a prerequisite, as do the two-year college programs in British Columbia. Ontario and Saskatchewan both have two-year college programs. Quebec offers dental hygiene programs in the college (CEGEP) system.

The University of British Columbia offers a post-diploma degree-completion Bachelor of Dental Science degree. The University of Toronto offers a post-diploma degree-completion Bachelor of Science in Dentistry (Dental Hygiene) program. The University of Alberta now offers a three-year diploma program and has approved a Bachelor of Science with a Dental Hygiene Specialization with the first graduating class in December of 2000.

One limitation of these baccalaureate programs is their geographic location. The majority of dental hygienists are

INTRODUCTION

In January 1998, the Canadian Dental Hygienists Association (CDHA) adopted a Policy Framework for Dental Hygiene Education in Canada. This document acknowledged that "social, economic, political, and technological forces will influence future dental hygiene practice."¹ It acknowledged the direct relationship between dental hygiene educational outcomes and the evolution of dental hygiene practice. It further acknowledged that "future dental hygiene practice must respond to an expanding body of dental hygiene theory, changing demographics and oral disease patterns, and the increasing need for quality oral health services."

Commensurate with these changes has been an expansion of the knowledge required to provide appropriate oral health services for each client. Dental hygiene entry-level curricula have been expanding to include necessary new

female and both programs have residency requirements. Thus family and financial commitments may limit the ability of many women to relocate to pursue their education at these two institutions.

In the past, Dalhousie University and the University of Manitoba have had proposals for degree-completion programs accepted in principle by their respective university senates, but the programs have not received funding support. The universities are currently working on proposals for baccalaureate degrees in dental hygiene. However, as these are not completed, it is not clear if the emphasis will be on degree-completion programs or on changing the nature of the existing diploma programs to degree programs. It is also not known what provisions will be incorporated into these proposals for increased flexibility or accessibility.

In Canada, the Working Group on the Practice of Dental Hygiene identified that: "as early as 1968 there had been an expression of need for baccalaureate programs in dental

BACCALAUREATE DENTAL HYGIENE EDUCATION

Dental hygienists are interested in pursuing baccalaureate-level dental hygiene education. Brand and Finocchi⁸ found that 70% of certificate and associate degree respondents in a study they conducted were considering pursuing a bachelor's degree. A certificate or associate degree credential in the United States is comparable to a diploma credential in Canada. DeBiase⁹ similarly found that 70% of licensed dental hygienists were interested in pursuing a baccalaureate degree in dental hygiene.

Some Canadian dental hygienists wishing to earn degrees in dental hygiene have pursued their education in the United States. Kinnear and Forgay¹⁰ reported that 16.2% of Canadian students attending U.S. dental hygiene schools chose to do so because of the availability of a degree program. Howard¹¹ found that the highest international student population in U.S. dental hygiene programs came from Canada (42%).

DeVore¹² has described the U.S. experience as follows:

Although there has been much discussion about the need to move toward baccalaureate education, the growth of programs at the community and junior college level, coupled with the decline in the number of programs offering the baccalaureate degree, send conflicting messages to the profession and the public.

The U.S. Commission on Dental Accreditation, as cited by DeVore,¹² found that approximately 81% of all dental hygiene students enrolled in 1991 had completed at least one year of full- or part-time college study before going into a dental hygiene program. Although there are no published data on the Canadian experience, it is not unreasonable to suspect similar findings. Further, although dental hygienists in Canada and the U.S. complete three or more years of college- or university-level education, very few earn credentials beyond those common to two-year programs.

Dental hygiene, in common with many other health professions, is grappling with change as it adapts to the rapidly evolving healthcare delivery system, and dental hygiene education must address the changing needs of its graduates. The profession is moving toward evidence-based, patient-centred care. For the dental hygiene practitioner, this means the application of high-level cognitive skills in assessing the quality of clinical studies and the efficacy of dental hygiene services for each patient.¹³ Dental hygienists must further adapt to changes in disease patterns in various populations and to innovations in technology.¹²

Changing demographics will also affect dental hygiene practice settings. The increase in the number of persons over the age of 65, as well as over the age of 85, will affect the demand for dental hygiene care in alternate practice settings.¹⁴ Can existing dental hygiene curricula continue to add more content without adjusting the credential awarded? This would not seem an effective product to the education consumer.

hygiene to prepare dental hygiene and dental assisting educators, senior public health supervisors and consultants, and researchers."⁷ This report made a number of recommendations concerning the establishment of post-diploma baccalaureate education for dental hygienists. To date, many of the recommendations have yet to be implemented.

The CDHA, in its recently released Policy Framework for Dental Hygiene Education in Canada,¹ has suggested that dental hygiene education must be accessible, accountable, committed to the delivery of quality oral health services, client-centred, collaborative, health and wellness focused, research-based, capable of assuring quality, and articulated. It must also provide graduates with opportunities to be self-directed critical thinkers. Currently available baccalaureate educational opportunities are not readily accessible, nor are they articulated.



MODELS OF DEGREE-COMPLETION AND BACCALAUREATE DENTAL HYGIENE EDUCATION

The American Association of Dental Schools' (AADS) Report of the Task Force on Dental Hygiene Education¹⁵ has proposed that the Bachelor of Science in Dental Hygiene (BSDH) requirements be limited to approximately 120 to 130 semester credit hours. This report recommended that additional hours should be considered inappropriate for the consumer in terms of time, money, or academic credential earned. Further recommendations were that 50 to 75% of course credits for the dental hygiene major should be in dental hygiene. The general education component of the BSDH program should be a minimum of 25% of the course credits.

The CDHA's Policy Framework for Dental Hygiene Education in Canada¹ does not specify parameters for baccalaureate-level education, other than stating dental hygiene education must be accessible and articulated. CDHA has been working to define learning outcomes for baccalaureate, masters, and doctoral levels of dental hygiene study, but at the time of writing these outcomes had not been validated.

Taub and Levy¹⁶ identified nine different curricular types for baccalaureate dental hygiene educational programs in the United States. Their classification of curriculum types is shown in Table 1.

Rubenstein and Brand¹⁷ surveyed 31 post-certificate dental hygiene degree-completion programs in the United States and found that the range of semester hour credits was 120 to 134. Seven programs require or strongly recommend an area of specialization and ten programs require clinical education as part of the curriculum. Three programs identified stated that preparing dental hygiene educators was their primary goal and three indicated that their primary goal was to prepare graduates for advanced professional or graduate education. Six programs included advancing students' clinical dental hygiene skills and knowledge as part of the program goal and five programs saw their program goal as developing a well-rounded graduate by providing a liberal arts education. A large number of programs¹⁸ did not include advanced clinical education, and a smaller

number of programs did not evaluate post-certificate students' clinical competency.

Over the years, several models have been proposed for baccalaureate dental hygiene education.^{5, 18-20} In 1980, Sisty proposed a four-year model incorporating humanities, basic sciences, social sciences, and dental sciences.¹⁸ Gluch-Scranton and Rigolizzo Gurenlian differentiated between the technical application of clinical skills at the associate degree or certificate level, and the increase in responsibility, clinical judgment, and depth of knowledge associated with the baccalaureate-level education.⁵ Their model differentiates roles, practice settings, and supervision levels for the differing educational levels and describes competencies for clinical and professional skills at the two educational levels. Wayman¹⁹ looks at the preparation necessary for clinical practice, recommending that this be standardized in lower-division programs and that there be upper-division dental hygiene and liberal arts theory leading to baccalaureate education. Wayman also recommends a new accrediting process for this program category.

Paarmann, Herzog, and Christie²⁰ propose a curriculum model for future roles. The six roles are researcher, administrator/manager, health promoter/educator, consumer advocate, change agent, and clinician. They delineate a four-year integrated dental hygiene curriculum model designed to prepare graduates for each of the six roles.

Burke¹³ suggested that the future in dental hygiene education may include a residency program to provide the dental hygienist with the knowledge and skills to function in settings where the dentist is not present. Such residency experiences could be for hospitals, nursing homes, independent practice, and other non-dental office settings. Residency programs appropriate to the care of the geriatric individual, in addition to the four-year degree in dental hygiene, are suggested as the optimum preparation required for working with the aging population. Burke has further suggested that new models for dental hygiene education must reveal alterations such as a more flexible academic schedule available at a number of sites. Flexible delivery systems should include "a variety of competency based curriculums offering modules, simulations, and a variety of clinical periods including accelerated and remedial opportunities."¹³

TABLE 1: Dental hygiene baccalaureate degree: Curriculum types¹⁶

TYPE	CURRICULUM
A	Two years of basic dental hygiene, followed by two years of liberal arts
B	Two years of liberal arts, followed by two years of basic dental hygiene
C	Two years of basic dental hygiene, followed by two years of liberal arts and advanced clinical dental hygiene
D	Two years of basic dental hygiene, followed by two years of liberal arts, dental hygiene education, and advanced clinical dental hygiene education
E	One year of liberal arts, followed by two years of basic dental hygiene, followed by one year of liberal arts and electives
F	One year of liberal arts, followed by two years of basic dental hygiene, followed by one year of liberal arts and advanced clinical dental hygiene
G	Two years of liberal arts, followed by two years of basic dental hygiene, advanced clinical and dental hygiene education
H	Four years of liberal arts and basic dental hygiene combined throughout
I	Two years of basic dental hygiene, followed by two years of liberal arts and health electives

Cameron and Fales²¹ surveyed graduates of both direct-entry degree and degree-completion programs. A majority of respondents were considering further education, and the majority of these were interested in pursuing a master's degree. A greater proportion of degree-completion graduates had completed advanced degrees, but these data are of limited value due to the small sample size in their study. Keeping this limitation in mind, they found rates of current enrolment in academic programs and rates of planned intentions to enrol were comparable among graduates of both programs. Degree-completion graduates showed a wider variety of practice settings.

ACCESSIBILITY

Dental hygienists are predominantly female, women making up 98% of the practitioners. A national study of dental hygienists found that 72% were married and 44.5% of the total respondents had one or more children in the home.⁶ Dental hygienists returning to complete a baccalaureate degree will share many of these characteristics. These potential students will have multiple demands on their time and energy, including family, studies, and in many cases a job outside the home. In many households, women still have the primary responsibility for housework, nurturing, and solving family crises and emergencies.²²

Many dental hygienists come from middle-class backgrounds and do not face the disadvantages faced by women from lower socioeconomic backgrounds. However, as a predominantly female group, they face many issues related to lack of power, particularly within their hierarchical relationships with the dental profession and faculties of den-

tistry.²³ Although the practice of dental hygiene is self-regulating in many provinces, the study of dental hygiene remains under the control of dental faculties in some locations, particularly in the university settings. Often it is these groups who have failed to support earlier proposals for dental hygiene baccalaureate programs, causing them to stall or fail outright.

In a 1989 study, Newell, Stoltenberg, Osborn, and Peterson found that over 43% of dental hygiene students in associate degree or certificate programs were interested in pursuing a baccalaureate degree-completion program, while 32% were not interested, and 24% were undecided.²⁴ This study found that these students identified cost, time, and family commitments as barriers to pursuing advanced education. Over 95% said they wanted to continue their education within five years of graduation. The authors went on to suggest that flexibility in curriculum design would be needed to meet the evening and part-time interests of some potential students. Increasing the number of locations for program delivery and expanding articulation agreements were also suggested as mechanisms for meeting the needs of certificate/associate degree graduates wishing to continue their education.

Despite acknowledgement of the need for flexibility, an American Association of Dental Schools task force report²⁵ found that fewer than 25% of dental hygiene programs offered innovative curriculum design. The profile of today's applicant pool defined by Walsh and Ishida²⁶ finds it to be smaller, more racially diverse, and having more previous education than applicants from the three previous decades. This pool, however, is still predominantly female. Walsh and Ishida confirm both the Bureau of Labor Statistics and other studies that indicate students entering a designated field of study enrol with one or more years of advanced education as a part-time student, which had been obtained prior to beginning the clinical phase of their education.

DeVore,¹² in a review of allied dental education, has indicated that programs must adopt innovative approaches to recruitment and program design. Dental hygiene programs have been locked into traditional approaches in curriculum and scheduling for too long. These factors may be contributing to declining applicant pools. To make these programs more accessible to the changing characteristics of potential applicants for dental hygiene education—whether at the baccalaureate or diploma level—part-time options, evening or weekend classes, remote site scheduling, and expanded use of instructional technology will be needed. Course content will need to be relevant to, and designed for, the adult learner, in keeping with the increasing age of the students. The fourth Pew Health Professions Commission Report²⁷ recommends that health professions curricula incorporate more interdisciplinary courses and activities, plus more outreach into community healthcare delivery systems.

In a 1989 study of Tennessee dental hygienists who had expressed interest in degree-completion education, Waring^{28,29} found that geographic location, flexibility in scheduling, and accessibility to course work were the most

Dental Hygiene Program University of Alberta

Applications are invited for two full-time appointments (one clinical stream and one tenure stream) in the Dental Hygiene Program from experienced Dental Hygienists with a minimum of a Master's degree. These positions will be a combination of clinical and didactic teaching. The positions will be at the (Clinical) Assistant Professor or (Clinical) Associate Professor level with salary commensurate with rank and experience. Positions will be available July 1, 2001. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. If suitable Canadian citizens and permanent residents cannot be found, other individuals will be considered. Applicants are asked to forward their curriculum vitae and the names and addresses of three referees by April 15, 2001 to: Prof. Jan Pimlott, Director, Dental Hygiene Program, Department of Dentistry, Faculty of Medicine and Dentistry, **University of Alberta**, Room 2032 Dentistry Pharmacy Centre, Edmonton, Alberta, T6G 2N8. Telephone: (780) 492-4479; Fax: (780) 492-8552. The records arising from this competition will be managed in accordance with provisions of the Alberta Freedom of Information and Protection of Privacy Act (FOIPP). The University of Alberta hires on the basis of merit. We are committed to the principle of equity in employment. We welcome diversity and encourage applications from all qualified women and men, including persons with disabilities, members of visible minorities, and Aboriginal persons.

important features in educational design for those who considered themselves likely participants. Waring found the demographic characteristics of those indicating they were likely to participate in degree-completion education were similar to other non-traditional students. Further, those who deemed themselves as likely participants were able to study on a part-time basis only.

For many professionals, it is the opportunity costs of time away from paid employment and families, rather than direct costs of tuition, that pose barriers. Calder and Sawatzky³⁰ found that family obligations and financial constraints were the most important primary factors for Saskatchewan nurses who did not wish to pursue baccalaureate-level nursing education. Respondents in their study, including both those who wished to pursue further education and those who did not, expressed a desire for “a mode of delivery that would facilitate their participation without having to leave home.”

Shomaker and Fairbanks³¹ found that a distance education program for nurses had a higher rate of graduation of minority students than comparable on-campus programs. These students indicated that the availability of the program made it possible to participate; they would not have quit their jobs and relocated in order to study because of their family and work demands. Another finding of this study was that fewer than 2% of graduates left their rural communities after graduation, suggesting a benefit of distance education to the communities and employers located there.

Dental hygienists are familiar with distance learning methods and currently use distance education methods for continuing education. Wilson,³² when investigating dental hygienists' preferences for content and delivery of continuing education, found that distance learning courses were the second most frequently utilized method of formal continuing education activity identified by Alberta and Ontario respondents.

ARTICULATION

Articulation has been defined in the Oxford English dictionary as “the structure whereby two...parts are connected.” Articulation of dental hygiene educational programs can be defined as the process by which admission into dental hygiene degree-completion programs is facilitated by a defined agreement between the degree-granting institution and the diploma-granting institution, such that entry and administrative barriers are reduced. This could include recognition of a specified number of semester credits upon application, without the lengthy delays necessary for reviews of course content on an individual basis. This would apply to all graduates of institutions, as defined in such agreements. The CDHA's Policy Framework for Dental Hygiene Education in Canada¹ has stated one of the guiding principles of dental hygiene education is that it must be “articulated, in order that the dental hygiene education programs and their credentials facilitate accessibility from entry level to post-doctoral qualifications.”

As dental hygiene diplomas tend to be highly specialized,

they do not articulate readily with degrees in other fields, increasing the need for a degree-completion program in dental hygiene. To that end, the CDHA modified its Policy Framework for Dental Hygiene Education in October of 2000, indicating that “Dental hygiene education programs *must* be located in recognized post-secondary institutions which have the mechanisms in place to develop articulation agreements or collaborative partnerships between dental hygiene programs and recognized degree-granting institutions.”³³ Such agreements will be essential for CDHA to achieve its objective, that a baccalaureate degree in dental hygiene be “the required credential for entry to dental hygiene practice for all new students commencing in the year 2005.”³³

Brutvan³⁴ has noted that institutions give little thought as to how students matriculate from the college system to the university; there appears to be little cooperation between the faculty and administrators of community colleges and universities even within the same state. A frequent complaint of dental hygiene graduates from community colleges is that their years of lower-division academic credits do not transfer easily into a university program.³⁴ At this time, there does not appear to be a significant movement to remove barriers to effective transfer among institutions for dental hygiene diploma graduates in Canada. This complaint is also made by university dental hygiene diploma graduates who wish to enrol in other degree programs. They receive little credit for their years of university-level studies. Paarmann, Herzog, and Christie suggest that “specific articulation agreements would need to be developed among schools to facilitate the mechanisms for awarding credit and for minimizing duplication of course work.”²⁰

BACCALAUREATE DENTAL HYGIENE - PROFESSIONAL VS LIBERAL EDUCATION

The American Association of Dental Schools' (AADS) Report of the Task Force on Dental Hygiene Education¹⁵ points out that

According to the literature in higher education, the baccalaureate degree is designed to educate liberally. Liberal education produces capable thinkers, communicators, problem solvers, and decision makers, individuals who have the capacity for initiation, reflection, and review that enables them to respond to the changing issues they confront (p. 14).

Literature on the meaning of a baccalaureate degree³⁵⁻³⁷ supports the AADS report's contention that baccalaureate study requires “multiple dimensions, not merely cumulative exposure to more and more of a specified subject area.” A liberal education will foster the development of competencies considered key for dental hygiene practice, such as “critical-thinking skills, cause-and-effect reasoning, intellectual empathy (seeing all sides of an issue), maturity of social-emotional judgement, adaptation to the environment, and increased respect for diversity.”¹⁵

The National Commission on Allied Health Commission Report, as cited in the AADS Report,¹⁵ has recommended that: “studies of humanities, social sciences and natural sci-

ences can help allied health students acquire values, knowledge and intellectual skills of great relevance for competent and humanistic practice as health care specialists." DeVore¹² posits that programs must go beyond technical training to develop the knowledge and critical thinking skills that the dental hygiene profession requires for professional advancement. Paarmann, Herzog, and Christie²⁰ quote the Education Commission of the States (1986) that says, in part, "specialization in undergraduate education has become a source of weakness; where it has made the undergraduate experience little more than vocational preparation, the result has been a disservice to the students and to the nation." They go on to note that the patient care needs of a changing population will require a professional with a more complex educational background, including more liberal arts courses.

Wayman¹⁹ has stated that "inherent in the meaning of baccalaureate dental hygiene education...is the offering of upper division courses in the theory and practice of dental hygiene itself." This author suggests that any proposed model of post-diploma baccalaureate degree-completion education for dental hygiene will need to build on the existing diploma-level education, incorporating advanced dental hygiene theory while maintaining an effective balance between professional education and liberal education.

CONCLUSION

This paper has identified changing needs for dental hygiene education in Canada. It has reviewed models of baccalaureate dental hygiene education and discussed issues surrounding access to baccalaureate education and articulation between diploma and degree programs. It has briefly discussed a proposed meaning for baccalaureate dental hygiene education. The CDHA's Policy Framework for Dental Hygiene Education in Canada, 1998 and 2005,^{1,33} has provided a conceptual framework for this discussion of baccalaureate dental hygiene education.

These models can provide Canadian educational institutions with points for consideration in their development of further educational initiatives. The author suggests that it is time for these institutions to provide greater educational opportunities to meet educational needs during the transition to the baccalaureate degree as the credential for entry to dental hygiene practice.

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The Quest for Baccalaureate Dental Hygiene Education at the University of Alberta: A Historical Review

by Judy A. Clarke, DipDH, Private practice, Sandra J. Cobban, DipDH, MDE, University of Alberta, Sharon M. Compton, DipDH, MA(Ed), University of Alberta, Eunice M. Edgington, DipDH, MA(Ed), University of Alberta, Stacy L. Mackie, DipDH, Private practice, and Margaret P. Wilson, DipDH, MEd, University of Alberta

ABSTRACT

This paper utilizes a historical approach to describe the process of achieving baccalaureate dental hygiene education at the University of Alberta in March 2000. The quest for this undergraduate degree had been ongoing since 1974. The chronology of previous attempts to implement baccalaureate education is described. In 1997, a grassroots committee called the Baccalaureate Strategy Committee was formed. This group, made up of practising dental hygienists, dental hygiene educators, dental hygiene students, and their parents used a framework for planned change to guide their actions. The paper concludes with a summary of the successful combination of political action and internal processes that led to achievement of the goal.

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INTRODUCTION

The commencement of the University of Alberta's 2000/2001 academic year will long be remembered as a milestone in the history of dental hygiene education in Alberta and Canada. That year marked the implementation of the Dental Hygiene Specialization program offered by the university's Faculty of Medicine and Dentistry. The quest for this undergraduate degree had been ongoing since 1974, during which time numerous attempts had been initiated to see this goal become a reality. Ultimately, it was a combination of an external movement coordinated by a Baccalaureate Strategy Committee and an internal push from dedicated dental hygiene faculty that saw a proposal accepted. In the spring of 2000, the University of Alberta approved the degree.

THE BEGINNINGS OF DENTAL HYGIENE EDUCATION AT THE UNIVERSITY OF ALBERTA

In 1960, the Government of Alberta proclaimed the Dental Auxiliaries Act. This act supported the delivery of dental



health services in community health units by dental auxiliaries. In response, the University of Alberta established a two-year educational program and, in September 1961, dental hygiene education was implemented as the School of Dental Hygiene within the Faculty of Dentistry. The first class of 19 students completed the two years of compressed study and graduated in May 1963. In that same year, the program received full accreditation status from the Canadian Dental Association and joined existing programs at the University of Toronto and Dalhousie University in Halifax.¹ The current educational program for dental hygienists exists as the Dental Hygiene Program, Department of Dentistry within the Faculty of Medicine and Dentistry. The University of Alberta has graduated 1,307 dental hygienists since the first class in 1963.²

BACCALAUREATE EDUCATION FOR DENTAL HYGIENE IN CANADA

The goal of baccalaureate-level dental hygiene education is not a new concept. The first baccalaureate degree program for dental hygiene was established in 1939 at the University of Michigan.³

The need for Canadian dental hygiene baccalaureate education was identified as early as the 1960s but was not reported in the literature until 1986 with the release of the *Report of the Working Group on the Practice of Dental Hygiene in Canada: Executive Summary and Recommendations*.⁴ The University of Montreal was the

first institution in Canada to offer a degree-completion program for dental hygiene in 1971, followed by a similar program at the University of Toronto in 1977⁴ and the University of British Columbia in 1992.³

For many years, the Canadian Dental Hygienists Association (CDHA) has promoted the value of baccalaureate-level education for dental hygienists. In its 1998 Policy Framework for Dental Hygiene Education, the CDHA recognized that

Future dental hygiene practice must respond to an expanding body of dental hygiene theory, changing demographics and oral disease patterns, and the increasing need for quality oral health services....

Dental hygiene education must be proactive and prepare graduates for increasing levels of responsibility and accountability in new and varied practice environments....

Recognizing future needs, CDHA advocates that dental hygiene education in Canada develop a more comprehensive academic system of baccalaureate and graduate dental hygiene programs.⁵

THE QUEST FOR A BACCALAUREATE DEGREE PROGRAM AT THE UNIVERSITY OF ALBERTA

The quest for dental hygiene degree status can be traced to the early 1970s. Following a review of several historical documents, minutes from the University of Alberta's Dentistry Faculty Council meetings, and other committee references, three separate plans in the 1970s and 1980s to establish a degree program were identified.



FIGURE 1. Steps in the process of program approval at the University of Alberta

At the University of Alberta, any program or department that plans to implement significant curriculum changes must proceed through a lengthy protocol. The process starts with approval from the department, moves to approval at the faculty level, and then continues to the university administration level. This arduous process, involving several committees at each level, is in place to ensure due consideration of curricular and financial impacts of any proposed changes. Figure 1 illustrates the steps in the approval process.

In November 1974, an initial proposal was circulated to members of the Dentistry Faculty Council. Later the next year, in a meeting attended by representatives from the Faculty of Dentistry, university academic officials, and the Government of Alberta, the proposal was further discussed as part of a document, *Faculty of Dentistry Proposal*. While the Dentistry Faculty Council approved the degree proposal in principle and funds were mentioned as being available from the provincial government, the dental faculty administration indicated "no serious interest in taking the degree program to senior Councils of the University for approval and implementation."^{1,6} This lack of support meant the proposal did not move outside of the Faculty of Dentistry and therefore did not come to the attention of the larger university community.

There was no further documentation of degree initiatives until December 1978 when Joan Conklin, Director of the Dental Hygiene Program at the time, drafted a new proposal. In November 1982, this proposal, entitled *Dental Hygiene Curriculum Expansion*, was presented to the university's Planning and Priorities Committee for review. Although records indicate that the proposal came to the attention of the university administration, no further mention of the proposal was made until 1985 when a third draft of the proposal was circulated. Further information regarding this proposal is not known. The Dentistry Faculty Council's meeting minutes from September 1987 to May 1990 remain unavailable for review.

Barbara Zier, then Chair of the Division of Dental Hygiene, presented the next proposal for baccalaureate education in March 1989. This proposal, entitled *A Degree Completion Program for Dental Hygiene: A Proposal for a Bachelor of Science in Dental Hygiene*, was able to obtain approval within the Faculty of Dentistry and move on to two university committees, the Academic Development Committee (ADC) and the Planning and Priorities Committee (PPC).

In January 1990, the ADC approved in principle "the establishment of a Bachelor of Science degree program in Dental Hygiene with a quota of 10 students." Following this approval, the proposal was forwarded for review to various university committees where recommendations for the admission and transfer components of the new BSc in Dental Hygiene could be approved. Unfortunately, the process was once again halted when the Dean of Dentistry requested the proposal be tabled. The rationale for this action was cited as "inappropriate timing" for requesting additional funds to run a new degree program, given the substantial deficit already facing the faculty.⁶

During this same time period, the President's Advisory Committee on Campus Review (PACCR) conducted an independent assessment of the Faculty of Dentistry. In its final report, this university committee recommended that the dental hygiene program become a degree no later than 1994.⁷ It was encouraging for dental hygiene faculty to receive this support from the larger university community.

In 1994 the Faculty of Dentistry faced an extremely challenging year. The President of the University of Alberta proposed closing the Faculty of Dentistry, due to the high cost of educating dental students, an outstanding faculty debt, and the lack of demonstrable leadership in the areas of research and graduate studies.⁸ Given the magnitude of the proposed closure, the future of the dental hygiene program was also in a very precarious position. The faculty would face a tumultuous time as numerous internal and external committees worked diligently to develop a proposal to retain dental and dental hygiene education at the University of Alberta. The focus of dental hygiene committee meetings changed from pursuit of a baccalaureate degree to developing a plan for retention.

In 1996 a plan was accepted to merge the Faculty of Dentistry as a department within the Faculty of Medicine. The Faculty of Medicine was subsequently renamed the Faculty of Medicine and Dentistry. The Division of Dental Hygiene was then designated as the Dental Hygiene Program within the Department of Dentistry. Within the newly restructured Department of Dentistry, the length of the dental and dental hygiene programs was extended to include an intersession term of 10 weeks. An additional criterion for maintaining diploma-level dental hygiene education at the University of Alberta involved the implementation of a pre-professional year of general arts and science courses. This restructuring increased the length of the dental hygiene program to three and a half years with 120 units of course weight. Despite the additional study required, dental hygiene students still graduated with a diploma.

Throughout the turbulent time of the proposed closure, the goal of a degree program was never forgotten. On April 25, 1997, a workshop was held to discuss and create a core strategy committee (the Baccalaureate Strategy Committee) to work toward the implementation of a dental hygiene degree. The Baccalaureate Strategy Committee was composed of grassroots dental hygienists, dental hygiene educators, dental hygiene students, and the parents of dental hygiene students. Over 60 individuals, guided by strategist Dr. Ginette Rodger, met over the next three years to map out the framework of political action required to meet the goal of this project.

It is important to note that the Baccalaureate Strategy Committee (BSC) acted independently from a new degree proposal that was concurrently being developed within the Department of Dentistry by dental hygiene faculty and Janice Pimlott, Director of the Dental Hygiene Program. The Baccalaureate Strategy Committee maintained consistent external pressure in strategic areas, pressure that is believed to have contributed greatly to the success of the proposal.

Following the initial planning meeting, the Baccalaureate Strategy Committee was subdivided into smaller working groups, each with their own mandate but working collectively to advance the ultimate goal of the group. Throughout the entire project, the prevailing argument focused on the injustice of the university administration in not granting the dental hygiene students a degree, based on the number of courses completed and the credits earned while in the existing program.

In a message developed and widely circulated by the Baccalaureate Strategy Committee, the position was stated as follows:

Currently, the University of Alberta only grants a diploma in dental hygiene education, in spite of the fact that the program is the equivalent of other baccalaureate degree programs on campus. Other health professions at the University of Alberta earn similar numbers of credits; however, they receive a baccalaureate degree. The recognition of a dental hygiene baccalaureate degree is not a salary issue since educational preparation is not directly related to additional salary.... Nor is it the creation of a longer university program. Rather, it is simply recognition of the education earned.⁹

Over a three-year period, the Baccalaureate Strategy Committee worked tirelessly toward seeing the degree become a reality. Its efforts were rewarded on March 24, 2000 when the University of Alberta announced that a baccalaureate degree in dental hygiene was approved. The Baccalaureate Strategy Committee members strongly believe that the success of achieving this goal was largely attributed to a strategic, organized, and consistent political action plan. In the words of Margaret Mead, "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."¹⁰

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<<http://www.mead2001.org/award.htm#anchor425450>>

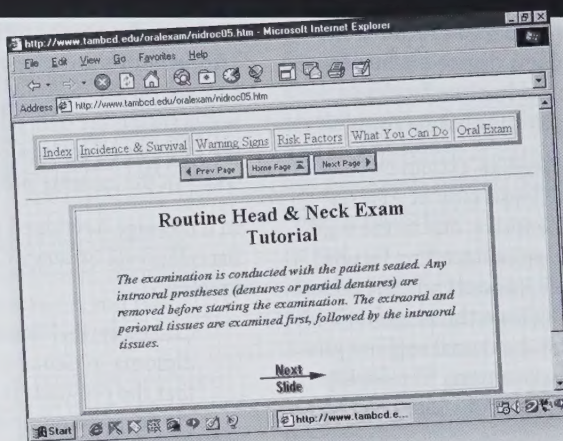
PROBING THE NET

By Karen Wolf, DipDH

I can hardly believe that spring is here once again and winter is gone for another year. Summer vacations are not far away and I imagine many of you are beginning to plan for these already.

In my Internet searching, I came across this wonderful web site that will enable us to refresh our skills with regard to head and neck examinations. Thanks to Baylor College of Dentistry, you will discover a tutorial slide presentation entitled "Routine Head and Neck Exam Tutorial." Along with the slides, there is a written description on extraoral examination, perioral and intraoral soft tissue examination (lips, labial mucosa, buccal mucosa, gingiva, tongue, floor of mouth, and palate), soft palate and oropharyngeal tissues, as well as a description of bimanual palpation of the mouth. The address of this site is <<http://www.tamcd.edu/oralexam/nidroc05.htm>>.

While visiting the American Dental Hygienists' Association web site, I came across two interesting papers on professional issues that are international in nature. To begin, the



ADHA Position Paper on Polishing clearly states:

"Only a licensed dental hygienist or dentist is qualified to determine the need for polishing procedures. Polishing should be performed only as needed and not be considered a routine procedure." Read the document itself at

<<http://www.adha.org/profissues/polishingpaper.htm>>.

Also check out the nine-page paper on "The Future of Oral Health" at <<http://www.adha.org/profissues/future/page1.htm>>. This is a "roaring" paper that clearly outlines the role of a RDH as a valuable member of the health team: "By taking medical and oral histories, monitoring blood pressure, conducting head and neck exams, and focusing on extensive oral exams, dental hygienists are gaining a reputation as experts in prevention intervention."

Take pride in your profession this year. I hope to hear a lot of "roaring"!

Talk soon.

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Conditions of the Aging Teeth: Prevention and Treatment

Introduction - As people live longer, they are subject to certain conditions of the aging teeth. These conditions are reviewed, along with effective preventive and treatment interventions.

Conditions of the Aging Teeth - Tooth wear is a consequence of normal chewing and is largely unavoidable. Tooth wear may be accelerated in the presence of bruxism or clenching; in this situation, the use of occlusal splints can reduce the rate of wear. Gingival recession is another inevitable process. It may lead to problems such as root sensitivity as well as esthetic concerns. Prevention of gingival recession should focus on excessive brushing and other damaging habits. Root caries may be a problem for mature patients who had minimal caries earlier in life. Meticulous oral hygiene, including fluoride treatments, is essential for prevention. Localized or generalized periodontal disease is common among older adults. Good oral hygiene, a good diet, and avoidance of smoking can help to prevent periodontitis; early detection can minimize the damage it causes.

Tooth discoloration is a near-universal consequence of years of consuming pigmented foods. Prevention is difficult; however, superficial dental stains can be easily managed using carbamide or hydrogen peroxide. Tooth cracking and chipping is another common finding in aging dentition and may range from mild to severe. These teeth may be difficult to restore; crowns, onlays, endodontic treatment, and even

extraction may be necessary, depending on the severity. One measure that is effective in the prevention of tooth chipping and cracking is the use of appropriate mouth guards by individuals involved in contact sports and other high-risk activities. Finally, certain conditions of old age, such as arthritis or mental decline, may render the patient unable to care for the teeth adequately. Such patients should be monitored closely for the development of caries, which should be promptly restored. Obtaining help with oral hygiene may help to prevent caries.

Discussion - As they age, patients should be advised about these often-inevitable aging-related conditions of the teeth. Armed with this knowledge, patients may be able to take necessary steps to prevent, reduce, or eliminate these common conditions.

Clinical Significance - A concise rundown of the common dental conditions affecting patients in their mature years, including effective preventive steps, is presented.

Christensen GJ: The inevitable maladies of the mature dentition.

J Am Dent Assoc 131:803-804, 2000

Reprints available from GJ Christensen, Clinical Research Associates, 3707 N Canyon Rd, Ste No 7A, Provo, UT 84604

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Subantimicrobial Dose Doxycycline: A New Adjunct to Scaling and Root Planing?

Introduction - Previous studies have shown that giving some tetracycline antibiotics at subantimicrobial doses can improve periodontal health, partially through inhibition of matrix metalloproteinases in the gingival tissues and fluid. Drug therapies to influence the host response to periodontal pathogens have been suggested as adjuncts to mechanical therapies. This trial examined the efficacy of subantimicrobial dose doxycycline (SDD) as an adjunct to scaling and root planing (SRP) for patients with adult periodontitis.

Methods - The double-blind, multicenter trial included

190 patients undergoing SRP for adult periodontitis. The patients were randomized to receive either doxycycline at a subantimicrobial dose of 20 mg bid or placebo for 9 months. Tooth sites were stratified by degree of disease severity at baseline. Outcome measures included changes in clinical attachment level and probing depth, percentage of tooth sites with attachment loss changes of 2 mm or greater and 3 mm or greater, and percentage of tooth sites with bleeding on probing.

Results - At 3, 6, and 9 months, patients treated with SDD showed greater improvement in clinical attachment level

and probing depth than those treated with placebo. These differences were significant across levels of severity. Among patients with severely affected sites, the percentage of sites with attachment loss of 2 mm or greater was significantly lower with SDD. These clinical benefits were achieved without harmful shifts in the periodontal flora and without the emergence of resistance to doxycycline or multiple antibiotics. Few discontinuations were related to adverse effects of SDD.

Discussion - In patients undergoing SRP for adult periodontitis, adjunct therapy with SDD significantly improves clinical outcomes, such as attachment levels and probing depths. The benefits are observed as clearly as 3 months and are maintained at 9 months. Few clinical adverse

effects or microbial changes are noted.

Clinical Significance - Subantimicrobial doses of doxycycline offer a valuable new adjunct to SRP for long-term management of adult periodontitis.

Caton JG, Ciancio SG, Blieden TM, et al: Treatment with subantimicrobial dose doxycycline improves the efficacy of scaling and root planing in patients with adult periodontitis. *J Periodontol* 71:521-532, 2000

Reprints available from Caton JG, Univ of Rochester Eastman Dental Ctr, 625 Elmwood Ave, Rochester, NY 14620; fax: (716) 473-5254

DENTAL ABSTRACTS VOLUME 45 #6 2000

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The Link between Periodontal and Cardiovascular Disease: Current Data

Introduction - Several studies in the past decade have suggested that dental disease is a significant predictor of coronary events, even after controlling for other risk factors. Thus, dental disease may be an important, modifiable risk factor for cardiovascular disease. Available information on the association between dental and cardiovascular disease are reviewed, including implications for intervention.

Link between Dental and Cardiovascular Disease -

Infections of the periodontium and pulp can produce an inflammatory response that results in release of bacterial products and inflammatory mediators, including lipopolysaccharides, heat shock proteins, and cytokines, into the circulation. Their scientific rigor has varied, but 12 studies have now shown that various dental conditions, such as periodontitis, missing teeth, and edentulousness, are related to either coronary heart disease or cerebral vascular accident. In some of these studies, the dental factors were the most significant parameters in the multivariate risk model. Six longitudinal studies have suggested that dental disease, especially periodontal disease, is a true risk factor, rather than a risk indicator, for coronary heart dis-

ease. The mechanism of this relationship may be direct, that is, mediated by the bacteria or their products directly on the host tissues, or the result of the entrance of plaque bacteria or their constituents into the bloodstream, with a resultant host reaction.

Intervention Strategies - Interventions to prevent cardiovascular disease have generally emphasized lifestyle and mediation approaches, whereas few have focused on controlling risk factors associated with chronic infection. If dental factors truly affect the rate of cardiovascular disease, then the same oral hygiene practices that have reduced dental caries should also cause a reduction in cardiovascular events. Clinical trials are needed to determine whether interventions directed against periodontal disease can delay or prevent adverse cardiovascular events. Antimicrobial agents used to treat or prevent chronic infections that lead to cardiovascular events might also be extended to the prevention of periodontal disease.

Discussion - The available information that suggests that dental disease is a risk factor for cardiovascular disease is reviewed. The findings raise the possibility that interventions to control dental disease, particularly periodontal disease, may also lower cardiovascular disease risk.

Clinical Significance - A growing body of evidence suggests that dental disease is a modifiable risk factor for cardiovascular disease. The recent studies underscore the importance of good oral health as part of an overall healthy lifestyle.

Loesche WJ: Periodontal disease: Link to cardiovascular disease.

Compend Contin Educ Dent 21: 463-482, 2000

Reprints not available

SEPTEMBER 28 - 30, 2001

Canadian Academy of Pediatric Dentistry Annual Meeting, Vancouver, British Columbia, Canada. Speakers: Dr. Robert Berkowitz on *Early Childhood Caries*, Dr. Rosamund Harrison on *Prevention of Early Childhood Tooth Decay*, and Dr. Steven Levy on *Fluoride Update*. Information: (Phone) 604-464-3213, (Fax) 604-941-6501, (E-mail) swcheung@home.com

Population-based Data Confirm Smoking's Impact on Periodontal Disease Risk

Introduction - Several lines of evidence suggest that cigarette smoking is an important risk factor for periodontal disease. However, there have been few data by which to estimate the proportion of cases of periodontitis attributable to smoking. Nationally representative data from the third National Health and Nutrition Examination Survey (NHANES III) were used to confirm the association between smoking and periodontitis and to estimate the proportion of cases caused by this risk factor.

Methods - In NHANES III, participants were interviewed about tobacco use and underwent a standard dental examination. The analysis included 12,329 dentate adults with complete information on periodontal status and tobacco use. National estimates were derived by means of weighted data.

Results - Overall, 27.9% of research subjects were current smokers and 23.3% were former smokers. On the basis of a definition of 1 or more sites with a clinical attachment level of 4 mm or greater apical to the cemento-enamel junction and a probing depth of 4 mm or greater, 9.2% of research subjects had periodontitis. Extrapolated to the U.S. population, this suggested approximately 15 million affected patients. On multivariate analysis, after adjustment for age, sex, race/ethnicity, education, and income : poverty ratio, current smokers had a 4-fold higher rate of periodontitis (prevalence odds ratio [ORp], 3.97). The risk was also increased for former smokers versus those who had never smoked (ORp, 1.68). For current smokers, the more cigarettes smoked, the higher risk: the ORp was 2.79 for those who smoked fewer than 10 cigarettes per day ver-

sus 5.88 for those who smoked 31 or more. For former smokers, the risk decreased with years since quitting: the ORp was 3.22 for those who quit within 0 to 2 years versus 1.15 for those who quit at least 11 years ago. Epidemiologic estimates suggested that 41.9% of cases of adult periodontitis in the population were attributable to current smoking and another 10.9% were attributable to former smoking. Nearly three-fourths of periodontitis among current smokers was attributable to smoking.

Discussion - The NHANES III data strongly support the importance of smoking as a risk factor for adult periodontitis. More than half of the cases might be attributable to smoking. Smoking cessation and prevention programs could have an important impact on the rate of periodontal disease in the United States.

Clinical Significance - Strong evidence exists that smoking contributes to periodontal disease. Dentists can play a key role in helping patients to quit smoking and in preventing young people from starting to smoke.

Tomar SL, Asma S: Smoking-attributable periodontitis in the United States: Findings from NHANES III. *J Periodontol* 71: 743-751, 2000

Reprints available from SL Tomar, Div of Oral Health, Ctrs for Disease Control and Prevention, 4770 Buford Hwy, NE, Mailstop F-10, Atlanta, GA 30341. Fax (770) 488-6080; e-mail <slt4@cdc.gov>

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DELIVERY OF LOCAL ANESTHETICS (continued from page 9)

client and the dental hygienist, before and after the dental hygienist acquired the skill and scope of practice to deliver local anesthetic. Some areas to investigate would be the following:

- frequency of administration of local anesthetic
- efficiency of dental hygiene practice
- anesthetic: client-requested or clinician-determined
- client perception of periodontal session (with and without local anesthetic)
- periodontal health outcome resulting from the session (did the local anesthetic make a difference to the clinical attachment levels, periodontal pocket depths, and other parameters used?)

The outcome of such a study may lead to an awakening of issues surrounding the delivery of local anesthetic by dental hygienists: efficiency of practice and quality of care. Rather than accepting the notion that dental hygienists with certi-

fication in the delivery of local anesthetic provide enhanced quality of care for their clients, challenge it. Is it the ability to deliver it or something else?

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January 15, 2001

Dear Salme:

Just a quick note to comment on your President's Message, Nov/Dec 2000 issue—the manner in which you presented this issue was so well done. When this issue first came to light about 10 years ago, I did not agree with it that much, but my views on it have changed and I support it totally. The term "professional" is overused in many areas and there is no doubt that it is associated with your education and the necessity to continue to upgrade as well as the recognition and support that hygienists may get from allied health care workers. With the changes that need to be implemented into our medical model and the potential use there is to utilize supportive health care providers, our profession has to be prepared to step in and be noticed.

The changes to *Probe* offer us an opportunity with the two scientific issues per year. I appreciated the informative article you wrote about fluoride trays—I utilized the information right away into our practice. I developed a policy and procedure manual for our office in Nov 97 and did not mention in it the selection of fluoride trays. We at this time purchase Butler but will review our choices for the next order.

I enjoy your presentations in person and always look forward to things that you publish. Thank you for all your hard work on behalf of the association, undergraduate training and continuing education.

Sincerely,

Renee Chabot Hoculik, RDH (1977)



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2001
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PRE-CONFERENCE

Niagara Region Wine Tour
(if numbers permit)

FRIDAY, SEPTEMBER 21ST

Mississauga Living Arts Centre

- Opening Ceremonies.
- Keynote Speaker: Ellie Rubin, Author of *Bulldog-Spirit of the New Entrepreneur*.
- CDHA/3M President's Reception.

SATURDAY, SEPTEMBER 22ND

Delta Meadowvale Resort and Conference Centre

Education

- New Era of Dental Hygiene Education... BSc Degrees. CDHA Panel Discussion.
- Long Distance Learning... The UBC Experience. Bonnie Craig.

Regulations

- Dental Hygiene Evolution, Not Revolution. Fran Richardson. CDHO Registrar.
- Self-Employment Issues. Revenue Canada.
- Quality Assurance. Panel Discussion.

Clinical Practice

- Systemic Implications of Periodontal Disease. Salme Lavigne.
- Periodontics and Implants... Assessment and Maintenance. Leanne Carlson-Mann.
- Endocarditis... Oral and General Implications. Dr. Andrew Morris.

Bridging the past and future it is your opportunity to network and celebrate the 'Dental Hygiene Odyssey' and to focus on the 'genesis' of our profession as we explore the challenges and opportunities we face in the new millennium.

- Swiss Air 111 Forensic Investigation. Master Corporal Marty Raymond.
- Craniofacial Surgery... Advances over the Years. Dr. John Phillips.
- The Mercury Controversy... What Is the Evidence?
- Independent Dental Hygiene Practice. Lynn Cappel.
- All Clefts Great and Small. Dale Scanlan.
- Latex Allergies.
- Tooth Whiteners... Evidenced-Based Care. Dr. Laura Tam.
- Medical Emergencies. Dennis St. Pierre.
- Capturing That Picture Perfect Smile. Rita Bauer.

General Health and Wellness

- Nutrition Methodology since Beginning of Time. Helen Bishop McDonald.
- Women's Mental Health... Riding the Emotional Rollercoaster. Leslie Born.
- Merging Personal and Professional Interest... Striking a Balance. Leslie Born.

- The Carbohydrate Glycemic Index... What it is All about?
- Hormone Replacement Therapy... The Natural Approach to Menopause and PMS. Dr. Alvin Pettie.
- Don't Let Your Smile Turn to Wrinkles. Dr. Gunter Born.
- Breast Cancer... The Road to Recovery. Canadian Breast Cancer Society.
- Women's Health Issue... Women as Subjects in Research.
- Environmental Allergies.
- Head and Neck Cancer Detection and Oral implications.

Dental Hygiene Initiatives (Community Connections)

- Program to be announced.

SUNDAY, SEPTEMBER 23RD

Delta Meadowvale Resort and Conference Centre

- Town Hall Forum.
- Research and Development in Preventive Dentistry. Dr. Hardy Limeback.
- Financial Planning for the New Millennium.
- Closing Ceremonies. Dr. Elaine Dembe, Author of *Passionate Longevity* and *Use The Good Dishes*.

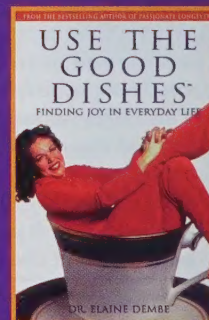
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inspiration and enthusiasm to create your own roadmap to "Success".

Dr. Elaine Dembe is one of Canada's outstanding authorities on longevity, stress management, and motivation. A celebrated chiropractor, writer, sought-after speaker, and marathon runner, she has helped thousands of people work out their kinks and feel better—both mentally and physically. Dr. Dembe's passion for living life to the fullest is sure to rub off on us all and lead us to a life of *Passionate Longevity*.



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² D. Kandelman and G. Gagnon, *Journal of Dental Research* 69 (11): 1771-1775, 1990

³ Birkhed D. Cariologic aspects of xylitol and its use in chewing gum: a review. *Acta Odontol Scand* 52: 116-127, 1994

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*Two six-month studies compared Listerine to brushing and flossing alone (n=107, n=124, p<0.001)

†"Listerine helps reduce gingivitis (minor inflammation of the gums caused by plaque above the gumline) when used in a conscientiously applied program of oral hygiene and dental care." CANADIAN DENTAL ASSOCIATION.

References: 1. Mandel IM. Antimicrobial mouthrinses: Overview and update. *Biological Therapies in Dentistry* 1994;10. 2. American Dental Association, Survey Center. Survey of consumer attitudes and behaviors regarding dental issues. 1997. 3. Brown LJ, et al. Periodontal status in the United States, 1988-91. Prevalence, extent, and demographic variation. *J Dent Res* 1996;75:672-683. 4. DePaola LG, et al. Chemotherapeutic inhibition of supragingival dental plaque and gingivitis development. *J Clin Periodontol* 1989;16:311-315. 5. Overholser CD, et al. Comparative effects of two chemotherapeutic mouthrinses on the development of plaque and gingivitis. *J Clin Periodontol* 1990;17:575-579. 6. Data on file. CDA, 1998.

Listerine Antiseptic/Antiplaque/Antigingivitis oral rinse. INDICATIONS: Helps reduce gingivitis (minor inflammation of the gums caused by plaque above the gumline) when used in a conscientiously applied program of oral hygiene and dental care. Kills the germs that cause bad breath, plaque, gingivitis and sore throats due to colds. CAUTIONS: Keep out of reach of children. Do not swallow. Not to be used by children under 12 years of age. In case of accidental ingestion, contact a Poison Control Centre or doctor immediately. DOSAGE: Rinse full strength with 20 mL for 30 seconds twice a day. MEDICINAL INGREDIENTS: Eucalyptol 0.091% w/v, Thymol 0.063% w/v, Menthol 0.042% w/v. NON-MEDICINAL INGREDIENT: Alcohol. NOTE: Cold temperatures may cloud this product; its efficacy will not be affected. SUPPLIED: Original Listerine: Clear, amber liquid available in bottles of 250, 750, and 1000 mL. Cool Mint Listerine: Clear, blue, cool mint flavoured liquid available in bottles of 250, 750, and 1000 mL. FreshBurst Listerine: Clear, green, mint flavoured liquid available in bottles of 250, 750, and 1000 mL.

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FOR A 34% BETTER CLEAN
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**Deadline
May 15, 2001**

CDHA/Colgate Community Health Award

The Canadian Dental Hygienists Association (CDHA) in conjunction with Colgate Oral Pharmaceuticals, a subsidiary of the Colgate Palmolive Company, is proud to announce the CDHA/Colgate Community Health Award.

DENTAL HYGIENISTS VOLUNTEERING IN THEIR COMMUNITY

This award program recognizes CDHA members and individuals who have implemented significant community volunteer programs that focus on preventive oral health care.

AWARD

The first-place award recipient will receive a commemorative award, a \$3,000 donation, plus travel and hotel accommodations to the CDHA Annual Conference for one representative.

SELECTION

Selection will be conducted by the CDHA Community Health Award Committee. Committee decisions will be final.

RULES

Award recipients will be notified immediately following the selection. Presentation of the winner will be made at the CDHA Annual Conference.

ELIGIBILITY

Eligibility is limited to CDHA members.

- Community projects are those that document a community need and have specific measurable objectives.
- Community programs must involve volunteer dental hygienists and may include other members of the oral health care team.
- Examples of community projects are
 - Underserved populations
 - School programs
 - Programs for special populations
 - Media public information programs
- Any component or member or group of members responsible for implementing a volunteer community program concerned with some aspect of preventive oral health may submit an entry.

- The number of entries is not limited. An entry may be submitted by an individual, a group of individuals or a component; however, duplicate entries submitted will not be considered.

INELIGIBILITY

The CDHA/Colgate Community Health Award was created to recognize the volunteer efforts of CDHA members.

Examples of ineligible entries would be

- Entries/projects that allow students to fulfill scholastic requirements
- Entries/projects in which participating dental hygienists are paid a salary for any portion of the entry/project
- Entries/projects submitted by an employee or family member of the Canadian Dental Hygienists Association (CDHA), the CDHA Community Health Award Committee, the Colgate-Palmolive Company or its subsidiaries
- Entries/projects for out-of-country programs

SUBMISSION OF ENTRY

- All entries must be accompanied by a signed application available from the CDHA Central Office.
- All entries must be received in the CDHA's Central Office no later than **May 15, 2001**.
- A description of not more than 2-3 typewritten, double-spaced pages, including a 100-word summary, must be submitted along with the supporting documentation.
- Information on the amount and source of program funding, as well as how the money will be used, must be included.
- Personal job descriptions, résumés, and/or curricula vitae should not be submitted.
- Entry materials must be typed or printed.
- Entry materials will not be returned.

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Application Request



The CDHA/Colgate Community Health Award Application Request

Name _____ Signature _____

Home Address _____

City _____ Province _____ Postal Code _____

Telephone _____ Fax _____

The deadline for applications is **May 15, 2001**. The recipient of the grant will be notified by **June 29, 2001** and will have one year to implement the initiative. Entire entries must be received in the CDHA's Central Office. Please send to: Canadian Dental Hygienists Association, 96 Centrepointhe Drive, Ottawa ON K2G 6B1

BRITISH COLUMBIA**CHILLIWACK, B.C.**

Busy modern dental office requires a full-time hygienist, permanent position, 4 days a week. Please telephone (604) 792-7354 or fax résumé to (604) 792-3216.

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Full-time hygiene position available in a busy hygiene-oriented practice that can offer flexible hours, lots of experience, and high starting wages. Dawson Creek is a friendly small town community, offering many outdoor activities and all amenities. Please send résumé to Dr. Mark Spitz, #201, 816 - 103 Avenue, Dawson Creek, BC V1G 2G1.

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Dental hygienists needed; one-year maternity leave starting May/June 2001. No evenings and alternate half-day Saturdays. Three-chair general practice. Wages and benefits negotiable on basis of performance. Try out beautiful BC. Please fax résumé to (604) 522-4013.

QUESNEL, B.C.

Position available for a full-time hygienist in a well-established group dental practice. Résumés with references should be mailed to Fraser View Dental Clinic, ATTN: Dr. B. Jaworski, Suite 22, 665 Front Street, Quesnel, BC V2J 5J5.

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Our family practice is looking for an enthusiastic, skilled, caring dental hygienist who can complement our friendly dental team. Located on beautiful Shuswap Lake, Salmon Arm is one of B.C.'s favourite vacation destinations, offering a variety of the year-round activities. For further details, telephone (250) 835-8710; e-mail dljrasek@telus.net; fax résumé to (250) 832-1322.

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Smithers itself offers a terrific lifestyle. Surrounded by beauty of the mountains, it offers the relaxed pace of a small town, yet with excellent facilities. Shopping, restaurants, indoor pool, gyms, and theatre are readily available. Outdoor activities are endless, such as golfing, downhill and cross-country skiing, hiking, fishing, horseback riding, snowmobiling, to name just a few.

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OTHER OPPORTUNITIES**CONTINUING EDUCATION - NELSON, B.C.**

The Kootenay Dental Hygiene Society is presenting a continuing education session:

Title: "Periodontal Therapy/Engineering the Results of Restorative Dentistry"
Presenters: Dr. Sonia S. Leziy and Dr. Brahm A. Miller
Date: June 2, 2001
Time: 8:30 a.m. to 4:30 p.m.
Location: Prestige Lakeside Resort, Nelson, BC
Contact: Nancy Matheson at (250) 352-5614

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Dedicated to promoting and facilitating international connections for the dental hygienist. Become part of the community. Membership includes contact information for overseas employment and volunteer projects, membership directory, placement services, one quarterly newsletter. For more details, please check our web site at www.globalhygienists.com or telephone (416) 828-5024.

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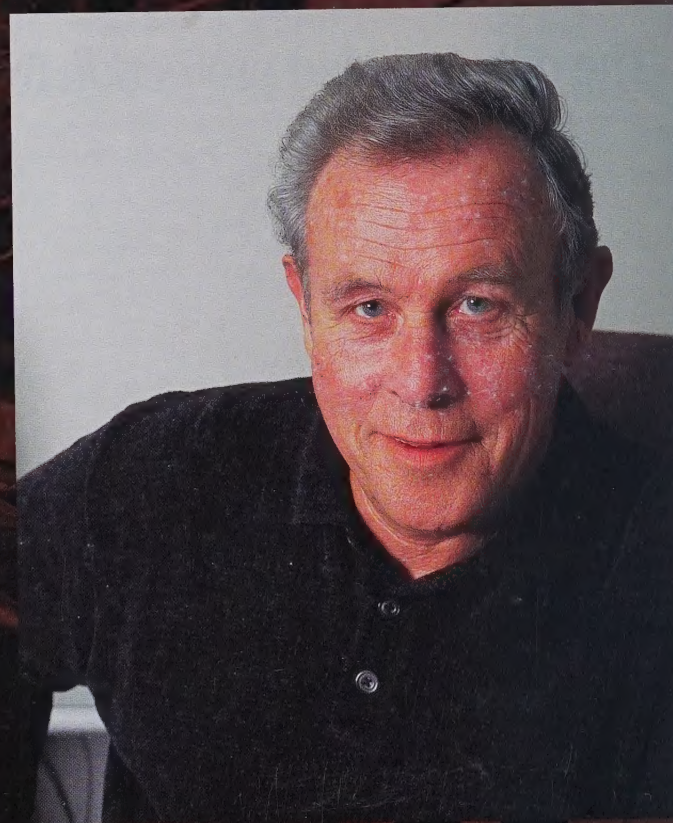
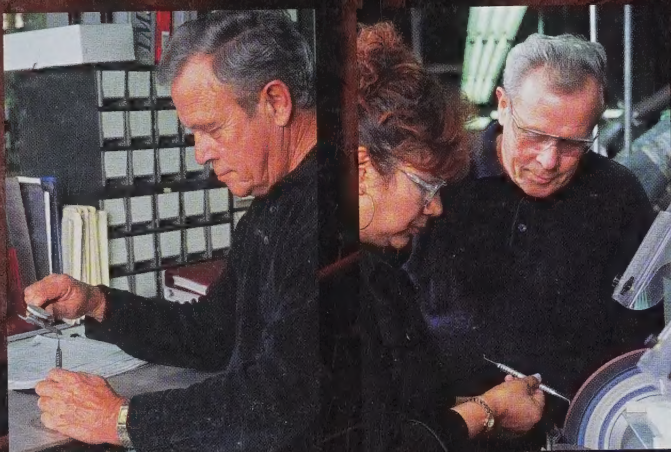
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SCIENTIFIC JOURNAL

May/June 2001 vol. 35 no. 3

**ACCEPTING CHANGE: NEW PERIODONTAL
DISEASE CLASSIFICATIONS**

**SKELETAL MUSCLE OXYGENATION AND BLOOD VOLUME
TRENDS IN THE WRIST EXTENSORS OF DENTAL HYGIENE
STUDENTS DURING PRE-CLINICAL INSTRUMENTATION
EXERCISES: APPLICATION OF NEAR-INFRARED
SPECTROSCOPY (NIRS)**

**SELECTED ABSTRACTS FROM
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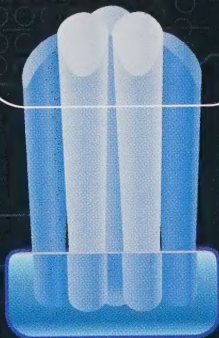
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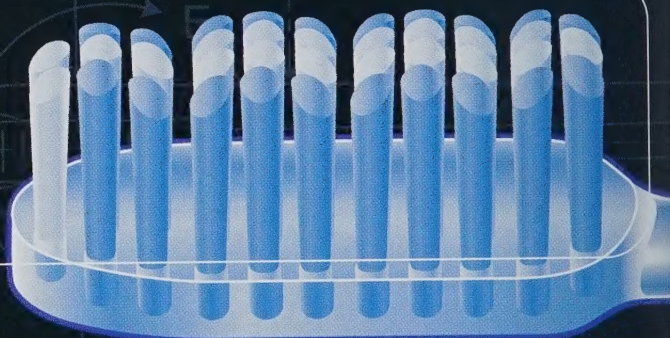
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HEALTHY GUMS. HEALTHY LIFE.™

ACCEPTING CHANGE: NEW PERIODONTAL DISEASE CLASSIFICATIONS

BY MARILYN GOULDING RDH, BSc, MOS
(Scientific Editor)

Lars Christersson, my dear friend, mentor, and former professor, taught me many truths, one being a defined marker for significant intelligence. Significant intelligence is "the ability or volition to change your mind and professional practice based on new information." This may be second nature for any scientist. We are in the "new information" business, always seeking, finding, and testing new theories and using them to revamp and hopefully improve the way things have always been done. Change is not always welcome, even for professionals. We get used to operating from time-tested paradigms so a shift in thinking, an alternate perspective, can be unsettling.

The discipline of periodontics is one aspect of dentistry that has enjoyed concentrated research efforts over the last 25 years. The resulting new discoveries have meant that much of my original training in dental hygiene (in the 70s) has needed amending. I used to rely on bleeding to determine sites at risk for periodontal breakdown, on extensive root planing and curettage as the treatment of choice, and on pocket depths to track response to therapy. Now all of this has changed. I now measure clinical attachment levels, look to local delivery of perio-chemotherapies, monitor home care antisepsis, and then re-measure attachment levels. I see clients instead of patients, possibly every three months for "periodontal maintenance" instead of yearly "recall" intervals and I use ultrasonic scaling methods to preserve delicate root integrity. Times have changed and we must keep the pace. In the interest of "significant intelligence," I ask you to read on to inform yourself of new directions on the perio frontier.

The Board of Trustees of the American Academy of Periodontology recently published the International Workshop for a Classification System of Periodontal Diseases and Conditions (*Annals of Periodontology* 4(1), December 1999).

This new classification system was proposed to correct for deficiencies and limitations inherent in an old categorization developed prior to recent findings. Definitive knowledge on host response and microbiological features now pinpoint the overlap among several disease categories and show glaring inconsistencies in disease parameters.

Some of the major changes include the following:

1. addition of a section on "Gingival Diseases" that helps the clinician determine gingival conditions that are either plaque-induced or, alternatively, not associated primarily with dental plaque;
2. replacement of "Adult Periodontitis" with "Chronic Periodontitis," a more logical term as adolescents can also have this form of periodontal disease;
3. replacement of "Early-Onset Periodontitis" (prepubertal, juvenile, and rapidly progressing periodontitis) with "Aggressive Periodontitis," a term that more aptly reflects the nature of the disease as opposed to the age of its onset.

Note: The workshop participants generally agreed to discard any disease classification that assumed knowledge of disease progression or that was age dependent. It was decided that any classification should be based on historical, clinical, radiographic, and laboratory findings;

4. elimination of a separate disease category for "Refractory Periodontitis" as any number of cases from any of the diagnostic categories may be unresponsive to therapy. Any form of periodontitis in the new classification system may carry the "refractory" designation to further define the clinical situation;
5. clarification of the designation "Periodontitis as a Manifestation of Systemic Diseases."

Note: Diabetes mellitus and smoking are not included in this classification. They are considered significant modifiers of periodontitis but there is currently no recognized condition specific ONLY to either of these conditions;

6. replacement of "Necrotizing Ulcerative Periodontitis" with "Necrotizing Periodontal Diseases" as insufficient data exists to determine whether Necrotizing Ulcerative Gingivitis (NUG) and Necrotizing Ulcerative Periodontitis (NUP) are truly separate disease entities. Both are related to a decreased host resistance;
7. addition of a category on "Periodontal Abscesses" as they present unique diagnostic and treatment challenges;
8. addition of a category on "Periodontic/Endodontic Lesions" to define periodontal lesions either associated and/or combined with endodontic conditions;

ACCEPTING CHANGE: NEW PERIODONTAL DISEASE
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1. Jain P, Vargas M, Denehy G, & Boyer D. *American Journal of Dentistry* Feb 1997; p.21.
2. Pashley DH. Proceedings of Symposium on Hypersensitive Dentin, The Dental Research Institute. 1985; p.65.
3. #1 Recommended sensitivity toothpaste by Dentists & Hygienists – Data on file, Block Drug Company (Canada) Ltd.

Call for Members for the *Probe Scientific Journal* Advisory/Reviewer Group

Marilyn Goulding, Scientific Editor, invites applications from qualified individuals interested in becoming a reviewer/advisor for the *Probe Scientific Journal*. Applicants should have a master's degree and be experienced in scientific writing and research protocol. Members of the Advisory/Reviewer Group are expected to critique several manuscripts a year, adhere to publication deadlines, and participate in communication with the Scientific Editor via e-mail.

If you are interested, please contact Frances Patterson, CDHA Executive Assistant, for more information at 1-800-267-5235 (toll free) or <info@cdha.ca>.

Profile of Sandy Cobban

The Advisory Group for the *Probe Scientific Journal* welcomes Sandy Cobban as the new member from Alberta. Sandy is currently Clinical Assistant Professor in the Dental Hygiene Program, Faculty of Medicine and Dentistry, University of Alberta. Her educational background includes a Master of Distance Education from Athabasca University and a Diploma in Dental Hygiene from George Brown College. In 2000, she was the recipient of two academic awards, the Tim Byrne Memorial Scholarship and the Canon Canada-IKON MDE Scholarship. Her professional activities include membership on the Examination Committee of the National Dental Hygiene Certification



Board for the past six years, serving as Chair in 2000–2001; coordinating the "Community Connections" section of CDHA's 1996, 1998, and 2000 conferences; and co-moderating online conferences for an online journal, the *International Review of Research in Open and Distance Learning*. Sandy also publishes in professional journals, presents at conferences, and leads workshops. Even with this busy schedule, she is active in her community as a soccer coach and as a volunteer with a minor hockey association.

CDHA/Oral-B Graduate Student Research Award

Recipient — Louanne Keenan

The Canadian Dental Hygienists Association and Oral-B are pleased to announce that Louanne Keenan of Sherwood Park, Alberta, is the recipient of the CDHA/Oral-B Graduate Student Research Award. Ms. Keenan is currently a doctoral candidate at the University of Alberta, studying in the area of relational ethics and mentoring health care professionals in the area of informed consent.



Ms. Keenan's research looks at relational issues inherent in the informed choice process, her subjects being women who refuse adjuvant therapy prescribed for breast cancer. The research also describes the context within which the decision was made.

Ms. Keenan is the mother of two teenage sons, sings with the Richard Eaton Singers, and is part of the Breast Friends Dragon Boat Team.

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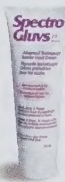
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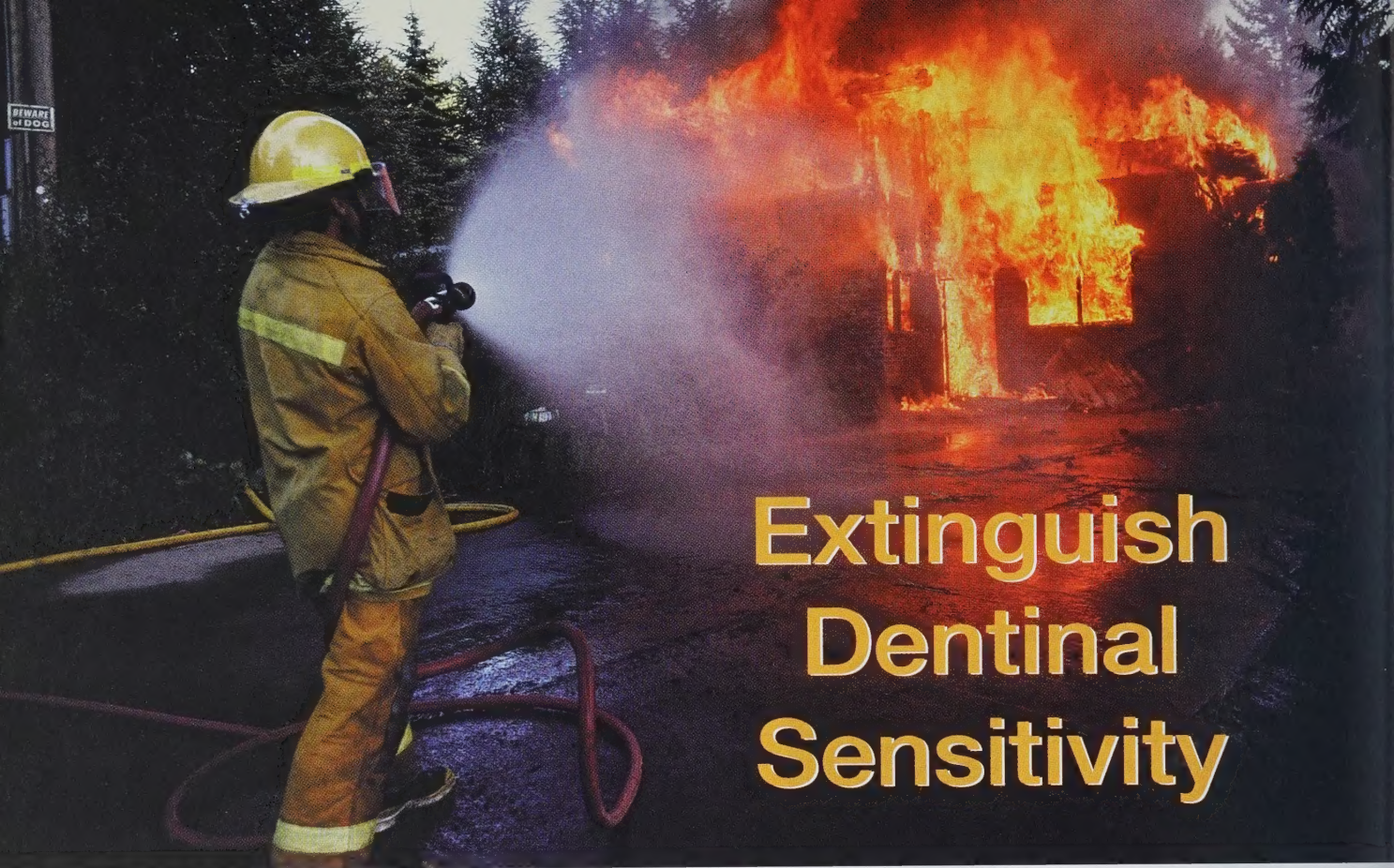
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SKELETAL MUSCLE OXYGENATION AND BLOOD VOLUME TRENDS IN THE WRIST EXTENSORS OF DENTAL HYGIENE STUDENTS DURING PRE-CLINICAL INSTRUMENTATION EXERCISES: APPLICATION OF NEAR-INFRARED SPECTROSCOPY (NIRS)

BY EUNICE EDGINGTON, DipDH, BScD, MA(Ed)* and RAMMOHAN MAIKALA, BEMechE, MSIndE†

*Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Canada. Tel. (780) 492-4457; fax (780) 492-8552; e-mail <ee2@ualberta.ca>

†Faculty of Rehabilitation Medicine, University of Alberta, Edmonton, Canada

KEYWORDS: near-infrared spectroscopy, dental hygiene scaling, oxygenation trends, blood volume trends

ABSTRACT

This pilot study reports how the near-infrared spectroscopy (NIRS) instrument detects oxygenation and blood volume trends in the wrist extensors of dental hygiene students during their pre-clinic instrumentation exercise. A near-infrared sensor was placed on both forearms of six dental hygiene students while they were at rest (for baseline measurements) and during simulation scaling treatment on a phantom head. Students used three different scalers (Gracey 13/14, Gracey 11/12, Gracey 1/2) and held the scaling instrument with his/her right hand and a mirror with his/her left hand. Measurements monitored during rest and scaling periods showed that NIRS could easily detect oxygenation and blood volume trends in the wrist extensor muscles during dental hygiene instrumentation. During the recovery period following the scaling exercise, oxygenation and blood volume values in both hands reached approximately the baseline rest values. Repeated measures analysis of variance showed no significant differences ($P > 0.05$) in the hand (right versus left hand) and in scaling treatment for both oxygenation and blood volume values. Further study, however, is required. This study provides preliminary evidence that the NIRS technique may be useful in studying the muscle physiology during fine motor tasks such as dental hygiene scaling.

(français à la page suivante)



INTRODUCTION

Occupational activities of the dental hygiene profession often involve prolonged periods of awkward posture, static load, repetitive forceful exertions/grasps with hand-held tools, at the work area (client's mouth). Typical dental hygiene clinical therapy involves soft and hard tissue examinations, periodontal debridement, and tooth surface polishing. All require intricate high-precision motions. The majority of these motions involve smaller muscle group activity, especially while grasping instruments (powered and non-powered) of varying sizes in various positions around the work area. These activities can lead to work-related musculoskeletal disorders in the upper extremity and back regions (Edgington 1983; Finsen *et al.* 1997; Gerwatowski *et al.* 1992; Osborn *et al.* 1990a, 1990b; Sanders and Turcotte 1997).

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References: 1. Cronin M, et al. *AmJ Dent* 1998;11:S17-S21. 2. Van der Weijden G.A., et al. *AmJ Dent* 1998;11:S23-S28. 3. Warren PR, et al. *JADA* 2000;131:389-394.



Figure 1. Operator positioning

During their pre-clinical training, dental hygiene students perform simulation exercises of scaling, root planing, and polishing with different instrumentation on a phantom head for a prolonged period of time (1 to 1½ hours).

Imagine holding a mirror in a client's mouth for more than 2 minutes. Continuous grasping for prolonged periods of time creates an oxygen demand in the muscles holding the mirror. Successful maintenance of this task also depends on the blood flow to these specific muscles. As the work intensity increases during such continuous grasping exercises (either static or rhythmic), demand for oxygen increases with a concomitant increase in blood flow due to the dilation of the blood vessels in the muscles. Hemoglobin molecules carrying oxygen in the blood release more oxygen in the muscles involved. However, depending on the intensity and duration of task, there is an imbalance between metabolic demand and oxygen delivery, resulting in increasing muscle irritation and fatigue due to lactic acid accumulation and oxygen deprivation (Kiser 1987).

When the task demand exceeds the physiological tolerance of skeletal muscle tissue, various musculoskeletal disorders develop (United States Dept. of Labor, 1999). Near-infrared spectroscopy (NIRS) instrumentation identifies oxygen

demand and blood flow in terms of muscle oxygenation and blood volume changes in the muscles during a task demand (rest and work). NIRS has been widely used to study muscle fatigue in sports medicine applications such as cycling (Belardinelli *et al.* 1995a, 1995b, 1995c; Bhambhani *et al.* 1998a), arm cranking (Bhambhani *et al.* 1998a), rowing (Chance *et al.* 1992), and speed skating (Rundell *et al.* 1997). Muscle oxygenation is defined as the relative saturation of oxyhemoglobin and oxymyoglobin and depends on the balance between oxygen delivery and metabolic rate (Belardinelli *et al.* 1995a). A decrease in oxygenation during work is known as deoxygenation. Its principle is based on the fact that tissues, such as muscles, are relatively transparent for light in the near-infrared (NIR) region of light spectrum (700–1000 nm). Light energy is differentially absorbed in this NIR region by the oxygenated and deoxygenated forms of hemoglobin and myoglobin in the muscle (Belardinelli *et al.* 1995c). At 760 nm, deoxyhemoglobin absorbs more light, whereas oxygenated hemoglobin absorbs more light at 850 nm. This suggests that, as hemoglobin is

ABRÉGÉ

Cette étude pilote fait état de l'utilisation d'un spectroscope à l'infrarouge proche (SIP) dans la détection des tendances de l'oxygénation et du volume sanguin dans les extenseurs du poignet, chez des étudiant(e)s en hygiène dentaire, pendant leurs exercices d'instrumentation préclinique. On a placé un capteur à l'infrarouge, sur les avant-bras de six étudiant(e)s en hygiène dentaire, alors qu'ils étaient au repos (à des fins de mesures de référence) et pendant la simulation de traitements de détartrage sur une tête fantôme. Les étudiant(e)s utilisaient alors trois différents détarteurs (Gracey 13/14, Gracey 11/12, Gracey 1/2). Chaque sujet tenait l'instrument de détartrage dans la main droite et un miroir dans la main gauche. Les mesures prises pendant les périodes de repos et de détartrage ont montré que le SIP pourrait facilement détecter les tendances de l'oxygénation et du volume sanguin dans les muscles extenseurs du poignet pendant l'instrumentation en hygiène dentaire. Pendant la période de récupération suivant le détartrage, les valeurs de l'oxygénation et du volume sanguin de l'exercice atteignaient approximativement, dans les deux mains, les valeurs de référence au repos. Une analyse de variance de mesures répétées n'a montré aucune différence significative ($p > 0,05$) dans la main droite (comparativement à la main gauche) ainsi que dans le traitement de détartrage pour les valeurs de l'oxygénation et du volume sanguin. D'autres études seront nécessaires. Toutefois, celle-ci donne la preuve préliminaire que la technique du SIP peut être utile dans l'étude de la physiologie musculaire pendant des tâches motrices fines comme le détartrage pratiqué en hygiène dentaire.

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oxygenated, the absorption of light at 760 nm decreases while absorption at 850 nm increases. Differences between the amount of light reflected at these wavelengths indicate a change in the concentration of oxygenated hemoglobin, whereas the sum of signals at these wavelengths indicates a change in the blood volume (Belardinelli *et al.* 1995a). Myoglobin also absorbs light at these wavelengths but is known to contribute much less to the NIRS signal (De Blasi *et al.* 1991). Hence, by monitoring the difference and sum in tissue absorbency between these two wavelengths, the relative changes in oxygenation and blood volume can be determined.

In a typical investigation using NIRS, a known amount of NIR light is directed at the tissue to be studied, e.g., a thigh muscle during leg cycling. Part of this transmitted light energy is either absorbed by the hemoglobin in the muscle or scattered in the muscle. The rest of the light is reflected to the detectors (at wavelengths of 760 nm and 850 nm) of NIRS instrumentation and is representative of the changes in the relative amounts of hemoglobin in the illuminated region. Using manufacturer-specific algorithms, oxygenation and blood volume measurements are calculated. Most of the available commercial NIRS units give the relative changes in hemoglobin concentration rather than absolute concentration (Simonson and Piantadosi 1996). This is due to the units' inability to quantify the path length of NIRS signal in the tissue. NIRS is reported as a valid and reliable instrument in analyzing muscle fatigue experienced during incremental, constant work rates, and isometric exercises (Belardinelli *et al.* 1995b; Bhambhani *et al.* 1998a, 1998b; Maikala and Bhambhani 1999; Mancini *et al.* 1994; Murthy *et al.* 1997).

Application of NIRS in ergonomic evaluation of tasks such as dental hygiene therapy has not yet been explored. The aim of this pilot study was to evaluate the NIRS instrument in detecting muscle oxygenation and blood volume trends in the wrist extensor muscles of both hands of dental hygiene students during dental hygiene therapy.

METHODOLOGY

Six second-year dental hygiene students (mean age: 29 ± 9.4 years), experienced with approximately 300 hours of practical clinical experience, were recruited for this study. All subjects were healthy women free from any metabolic, cardiovascular, cerebrovascular, and neuromuscular disorders. Each subject duly signed a consent form approved by the University Human Ethics Committee before participating. Any subject with previous history of intense upper extremity activities was not allowed to participate in the study. Subjects were also requested to abstain from any type of rigorous upper extremity activity for at least 24 hours before participating in the study. All subjects in the study were right-handed.

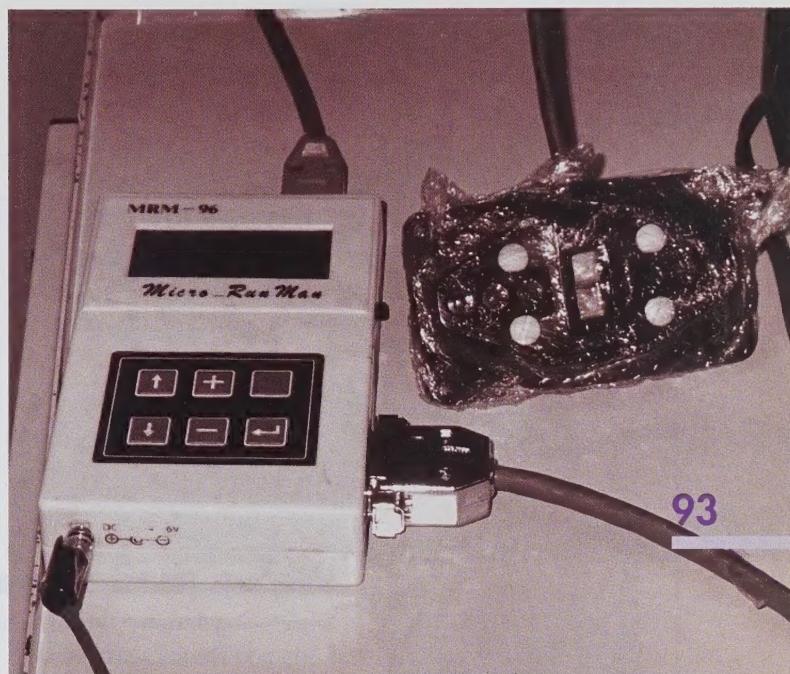


Figure 2. NIRS unit

Instruments used by dental hygiene students

Each instrument (Hu-Friedy, U.S.) is designed to work on a specific surface in the phantom head dent form:

1. Gracey 13/14 (G13/14): a posterior area-specific curet for distal surfaces, flexible shank
2. Gracey 11/12 (G11/12): a posterior area-specific curet for mesial surfaces, flexible shank
3. Gracey 1/2 (G1/2): an anterior area-specific curet, flexible shank
4. Dental mirror offset at an angle to retract the cheek to facilitate the use of scalers on specific surfaces in the phantom head mouth

Protocol

Each subject sat in an operator chair and adjusted a phantom head, equipped with a rubber mask and a dent form (FRASACO, Tettinang, Germany), to a comfortable working position. In the present study, subjects' postural techniques were not standardized. They were, however, asked to follow the clinic guidelines for patient-operator positioning (Figure 1). Each subject used the same dental hygiene instruments for the study. Subjects performed scaling with their right hand and held the mirror in their left hand. The NIRS monitoring session consisted of 2 minutes rest, 2 minutes scaling with G13/14, 2 minutes recovery; 2 minutes scaling with G11/12, 2 minutes recovery; 2 minutes scaling with G1/2, and 2 minutes recovery. Subjects made approximately 40 to 60 strokes in 2 minutes with each scaler. The order of using



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the instruments was standardized and based on the typical sequence of use during delivery of therapy. The same area was targeted in the phantom head with the same instrument for every subject.

Muscle oxygenation and blood volume measurements

Two continuous wave NIRS units (MicroRunman, NIM Inc., Philadelphia, U.S.) that monitor relative changes of oxygenated and deoxygenated states of hemoglobin/myoglobin were used. The NIRS unit consists of a superficial near-infrared sensor fitted with six light-emitting tungsten lamps placed 2 cm, 3 cm, and 4 cm apart; two photo-diode detectors that absorb light in the near-infrared range between 760 nm and 850 nm; and a display unit that amplifies and displays the absorbency signal generated (Figure 2). The sensors were placed in parallel on the extensor indicis muscle at 4 cm from the wrist joint of each subject's forearm (Figures 3 and 4). An elastic bandage was wrapped around the sensor on each arm, thus preventing any loss of light (Figure 5). As directed in the manufacturer's manual, the sensor was calibrated before each test at 760 nm and 850 nm wavelengths. The difference in signals obtained at these two wavelengths provides oxygenation saturation; the sum of these signals provides relative change in total blood volume. The NIRS instrument used for this study calculates oxygenation and blood volume values and displays the results directly on the display unit. Both oxygenation and blood volume values were measured in terms of optical density. The equations used for calculating oxygenation and blood volume measurements are specific to the manufacturer (MicroRunman, NIM Inc., Philadelphia, U.S.). Optical density is a dimensionless unit and is defined as the logarithmic ratio of intensity of light calibrated at each wavelength to the intensity of measured light at the same wavelength.

NIRS data analysis

Minimum (Min) and maximum (Max) oxygenation and blood volume values were obtained for each hand during each scaling exercise. Minimum values were recorded during scaling with each scaler, and maximum values were recorded during recovery from each scaler. Two-way repeated measures analysis of variance on hand (right and left hand) and scaling treatment with three scalers (G13/14, G11/12, G1/2) was used to evaluate the differences in both oxygenation and blood volume means. Significant F ratios were examined on a post hoc basis using the Scheffe procedure for multiple comparisons. SPSS statistical software was used for this purpose.

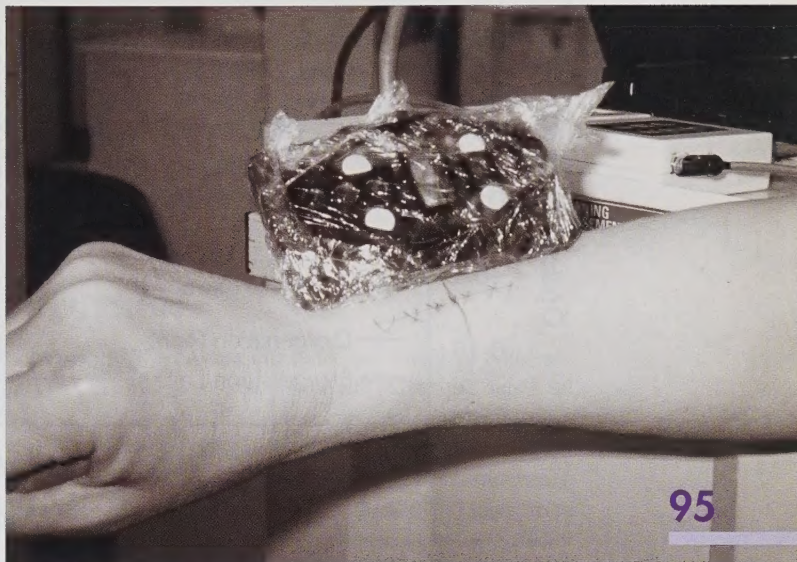


Figure 3. Identifying location on muscle

RESULTS

Figures 6 and 7 show the typical oxygen and blood volume trends for both left and right hands of a single subject during scaling and recovery. Rest measurements are equal to baseline values for G13/14. Recovery 1 is the oxygenation and blood volume trend obtained during muscle inactivity after scaling with G13/14 and is equal to baseline values for G11/12. Recovery 2 is the oxygenation and blood volume trend obtained during muscle inactivity after scaling with G11/12 and is equal to baseline values for G1/2. Recovery 3 is the recovery measurements after scaling with G1/2. Mean oxygenation and blood volume in optical density units ($P > 0.05$) are shown in Figures 8A and 8B. In these graphs, minimum oxygenation/blood volume in the right/left hand is abbreviated as Right-Min and Left-Min. Maximum



Figure 4. Placement of sensor on muscle

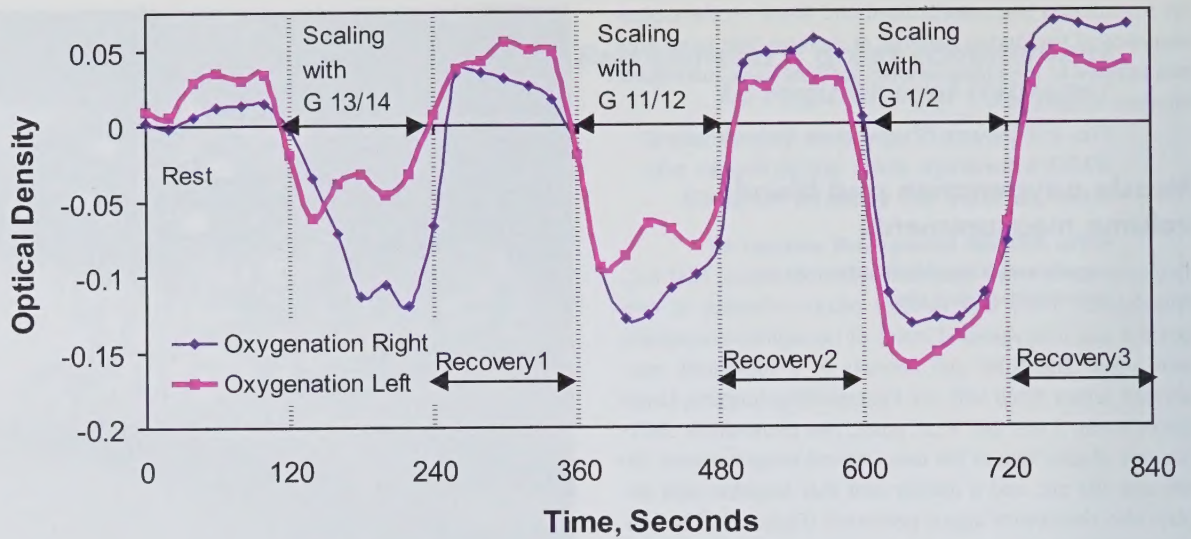


Figure 6. Oxygenation trends

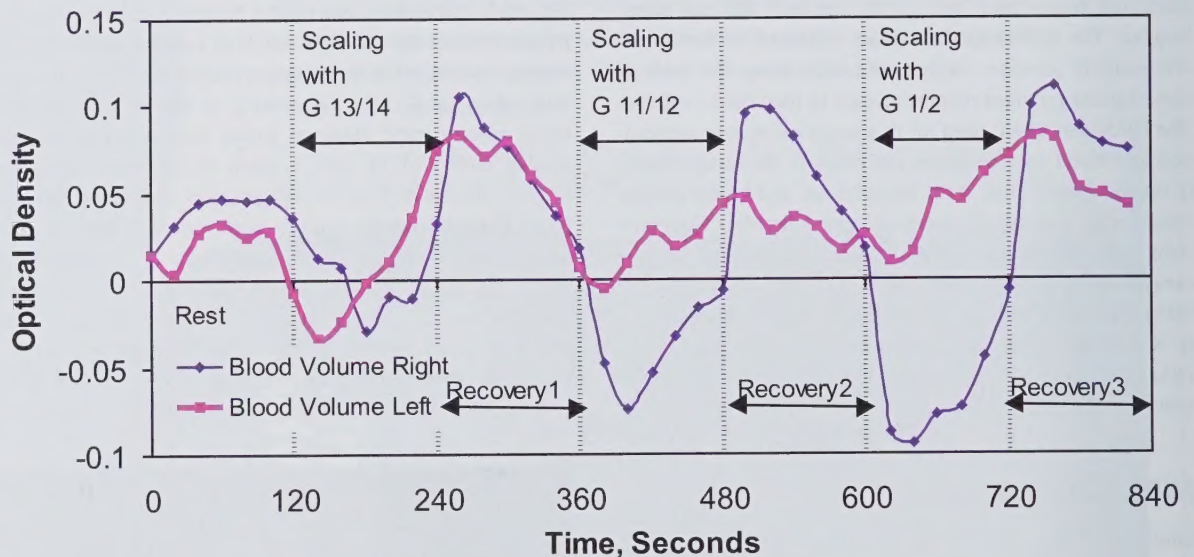


Figure 7. Blood volume trends

oxygenation/blood volume in the right and left hand is abbreviated as Right-Max and Left-Max. Statistical analysis showed no significant difference between right and left hand mean values (oxygenation: Min [$F=0.08$, $P=0.789$] and Max [$F=1.134$, $P=0.336$]; and blood volume: Min [$F=1.992$, $P=0.217$] and Max [$F=0.073$, $P=0.798$]). Also, there was no significant difference among mean values of the three scalars (oxygenation: Min [$F=1.544$, $P=0.260$] and Max [$F=2.652$, $P=0.119$]; and blood volume: Min [$F=0.15$, $P=0.862$] and Max [$F=2.332$, $P=0.147$]). Interaction between hand and scaling with three scales was also found to have no statistical significance (oxygenation: Min [$F=1.4$,

$P=0.291$] and Max [$F=0.408$, $P=0.675$]; and blood volume: Min [$F=1.352$, $P=0.302$] and Max [$F=0.125$, $P=0.884$]). Subsequent post hoc analysis also showed no significant differences ($P>0.05$). Trends obtained in oxygenation and blood volume during the session were explained as follows.

Oxygenation trends

For the majority of subjects scaling with a G13/14, the oxygenation in the right hand showed a continuous decline in the slope within one minute of work and a steady increase

towards baseline in the next minute (Figure 6). Reoxygenation within 40 seconds of recovery was observed during scaling with this scaler. With a G11/12, oxygenation trends followed the same pattern; however, mean optical density values increased further than that of the G13/14. In all the subjects, the highest mean oxygenation values were observed during scaling with a G1/2. During scaling with the right hand, the left hand was used to hold the mirror. Left-hand trends were similar to those of the right hand, although they showed much higher mean deoxygenation values for each of the three scalers. Again, the highest values were obtained during scaling with a G1/2 (Figure 8A). Recovery periods between each scaling show that oxygenation measurements were reaching baseline values.

Blood volume trends

Trends obtained in the blood volume were similar to those of oxygenation, with a rapid decrease in blood volume slope during scaling with the right hand, and an immediate increase in blood volume towards baseline during the recovery period (Figure 7). These blood volume changes were also true with left-hand trends. In the right hand during scaling, mean blood volume values were much higher than mean oxygenation values, and also higher with G13/14 than scaling with the G11/12 and G1/2 scalers. Similarly, mean values

obtained in the left hand (mirror hand), during right-hand scaling with a G13/14, were higher than those when scaling with the G11/12 and G1/2. Contrary to the left-hand oxygenation trends, the mean blood volume values in the left hand increased during scaling with each instrument. However, the lowest values were obtained during scaling with the G13/14 and the highest values were obtained during work with the G11/12 (Figure 8B).

DISCUSSION

No statistically significant difference was found for both oxygenation and blood volume measurements among right- and left-hand scaling with the three scalers, and their interaction. This result may be due to a limited sample size and large coefficient of variation (COV) among these measurements. For minimum oxygenation during scaling, COV ranged from -2.8% to -1.5% for right hands and from -1.8% to -1% for left hands. For minimum blood volume during scaling, COV ranged from -2.1% to -0.6% for right hands and from -9% to 17% for left hands. For maximum oxygenation during recovery, COV ranged from 1.1% to 1.46% for right hands and from 1.6% to 2.71% for left hands.

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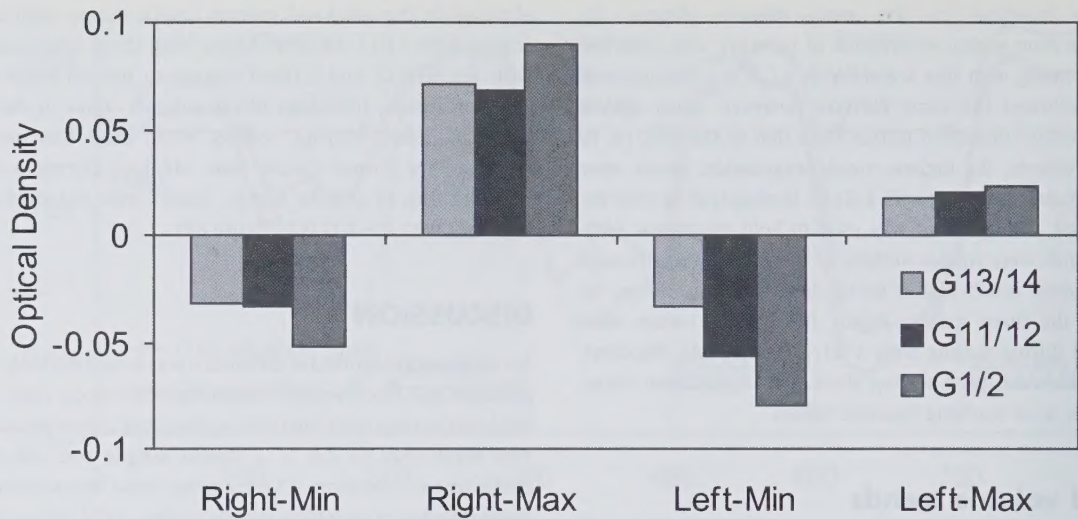


Figure 8A. Mean oxygenation changes with three scalers

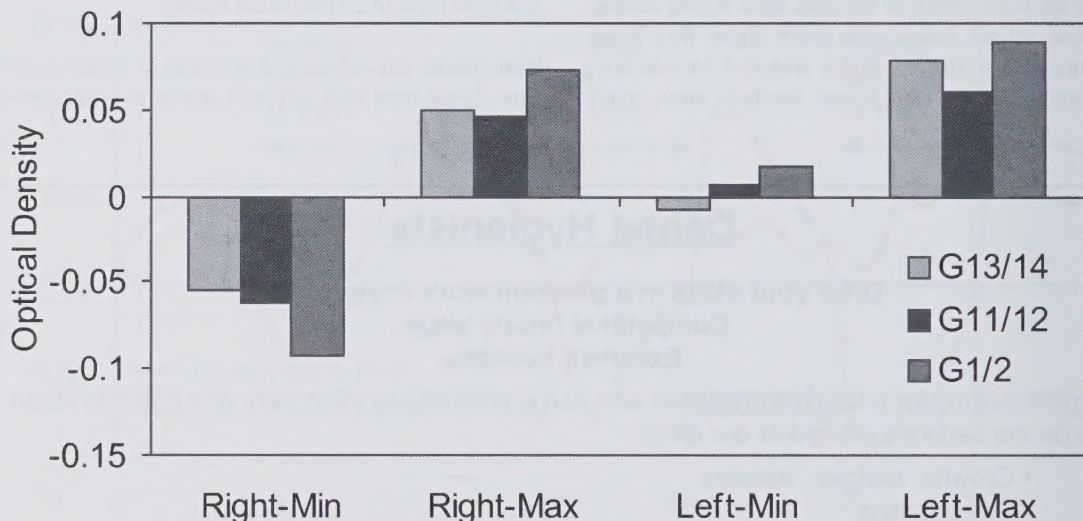


Figure 8B. Mean blood volume changes with three scalers

disorders (Stern and Dahl 1992). Repetitive motions performed daily by the dental hygienists were simulated in this study. All the dental hygienists hold instruments in a modified pen grasp style throughout scaling and root planning, with a periodic release of grip to roll the handle to adapt the working end to the tooth surface. Either the thumb or index finger is used as a driving finger to roll the scaler handle between the strokes. In addition to the grasp during scaling, it is suggested that highly repetitive and forceful strokes combined with wrist (as a pivot), ulnar, and radial deviation, and forearm supination and pronation will result in a 5° to 45° range of motion (flexion and extension) in the wrist (Stern

and Dahl 1992). Hence the oxygenation and blood volume trends presented in this study can also be a cumulative effect of these motions during scaling. There are no studies to date relating muscle oxygenation and blood volume trends during pre-clinical dental hygiene instrumentation. Thus the results of the present study cannot be compared with any existing dental hygiene literature.

The modified pen grasp, a static grasp, is typically held for at least 93% of a scaling treatment (Stern and Dahl 1992). Even though the force applied by each of these fingers was not measured in this study, by comparing oxygenation and

blood volume profiles to the baseline values (Figures 6 and 7), one can determine the extent of oxygen desaturation during the scaling process. Minimum values of oxygenation and blood volume during scaling indicate a reduction of blood flow to the extensor indicis muscle, with an increased deficiency in oxygen supply to the muscle as the work duration increased. This phenomenon is also interpreted as the fatiguability of the specific muscle under investigation, in terms of maximum deoxygenation.

The left hand was used to hold a mirror for retraction of the cheeks, lips, and tongue during scaling. Despite this, the trends observed in the left hand were quite similar to those in the right hand during each scaling period. These trends may suggest that continuous static holding of the mirror for a prolonged period may also lead to fatigue in the hand during therapy. A dental hygienist typically holds the mirror either in a modified pen grasp or a light palmar grasp. This pilot study, however, did not monitor the type of grasp adopted by the subjects.

From Figures 6 and 7, one can also distinguish the effect of using different dental hygiene instruments on oxygenation and blood volume trends. Since the design of each scaler varies, the change in oxygenation and blood volume trends can be attributed not only to the effort applied by each sub-

ject to a specific area but also to the scaler design. A future study will be expanded to investigate the effect of different types of scalers (size, shape, make), different operator positions, and different grasp techniques to further increase the understanding of muscle oxygenation and blood volume changes during dental hygiene therapy.

To date, no NIRS studies pertaining to dental hygiene tasks or to the extensor indicis muscle have been published. Main findings of this pilot study suggest that right- and left-hand trends were similar. Trends obtained during scaling with three scalers also suggest that there is a similar trend repeated with each scaler. Overall, oxygenation and blood volume trends in the present study were similar to those of any large muscular activity reported (Bhambhani *et al.* 1998a; Maikala *et al.* 2000). The present study was conducted to evaluate the NIRS instrument in detecting muscle oxygenation and blood volume trends. In future investigations, different sequences and durations of scaling (and recovery) with three scalers will be evaluated to determine their effect on muscle fatigue. Hence, conclusions on muscle oxygen and blood volume trends in both hands, and for each scaler, have to be interpreted with caution. Despite the limited sample size, this study demonstrates that the NIRS instrument can be applied to detect oxygenation and blood volume trends even in high-precision work such as dental hygiene therapy.



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FUTURE STUDIES

The present study increases the understanding of muscle metabolism in different muscles activated during dental hygiene therapy. The potential application of NIRS in dental hygiene to assist in investigating musculoskeletal disorders should be further explored. This current study will be expanded to examine the effect of varying grasps and static postures adopted during dental hygiene instrumentation on muscle metabolism.

ACKNOWLEDGMENTS

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EDITORIAL: ACCEPTING CHANGE: NEW PERIODONTAL DISEASE CLASSIFICATIONS continued from page 83

9. addition of a category on "Developmental or Acquired Deformities and Conditions" that allows for modifiers of the host's susceptibility to periodontal diseases, which in turn influence outcomes of therapy.

Further to this, the Academy has published the *Parameters of Care* (Supplement to the *Journal of Periodontology*, May 2000) to help the dental practitioner achieve a successful treatment outcome through a range of options. This can be downloaded from the home page for the American Academy of Periodontology at <<http://www.perio.org>> under the selection *Journal of Periodontology*. Good luck and welcome to the world of significant intelligence!

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Mentorship and Professional Pride

PRESIDENT'S MESSAGE

At a recent meeting of the CDHA Board of Directors, I was struck by the comments of several board members when they were asked why they ran for positions on the board.

Overwhelmingly, they were there because a positive role model or some individual or colleague encouraged and helped them to believe in themselves. Do you ever think about why you entered the dental hygiene profession? I would be surprised if you didn't say that you too had someone whom you admired and respected who somehow influenced you into making your decision. Although you may not have thought of this person as a mentor, that is exactly what he or she was.

Throughout our lifetimes and professional careers, we all will have many mentors to help us along the way and influence us in positive ways to grow and change. But have you ever thought of being a mentor to someone else? Personally, I cannot think of a more rewarding role to play. As dental hygienists, we have an obligation to promote ourselves as a profession, not only to the rest of the world, but to ourselves. But first we must believe in ourselves as individual professionals.

As Canadian dental hygienists, we live in one of the best countries in the world with one of the best educational systems available in dental hygiene. We should look on our accomplishments with a certain amount of pride. We are admired by our colleagues in the United States for our accomplishments in self-governance, professional membership, and growing professional autonomy. We are also well respected around the world through our representation in the International Federation of Dental Hygiene (IFDH). We have multiple opportunities to mentor others, both into the profession and in all stages of their professional careers: our future colleagues during their education; our current colleagues who do not participate in professional activities; our American neighbours in their efforts towards self-governance;



SALME LAVIGNE
RDH, BA, MS (DH)

and emerging new programs in countries less advanced than Canada.

I recently had the privilege of working with a group of American dental hygienists, one of whom was very excited about her recent trip to Russia to set up the first dental hygiene program in that country. When asked why she did it, she replied that she wanted to make a difference and ensure that Russian dental hygienists had the same training as their North American counterparts. Besides, she said, "It made her feel good!" That's a prime example of what mentorship does for the soul.

I firmly believe it all begins in the schools. As students first enter dental hygiene programs, the teachers and professors become the key mentors or the role models. They instill professional values, ethics, and a sense of professional pride. They hope, like any parents raising children, that their graduates will go off with their ideals and their dreams and assume leadership roles within the profession. However, they might hope in vain if the new graduates do not have a more seasoned colleague to guide, nurture, and influence them. In fact, they may fall by the wayside and never really feel part of the profession. This may help to

Continued on page 2...

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Mentorat et fierté professionnelle

LE MESSAGE DE LA PRÉSIDENTE

Lors d'une récente rencontre du conseil d'administration de l'ACHD, j'ai été étonnée par les commentaires de plusieurs membres à qui on avait demandé pourquoi elles avaient brigué un poste au sein du conseil. Pour une forte majorité d'entre elles, c'était à cause d'un modèle positif, d'une personne ou d'une collègue qui les avaient encouragées et aidées à croire en elles-mêmes. Pensez-vous parfois à la raison pour laquelle vous êtes devenue membre de la profession d'hygiéniste dentaire? Je ne serais pas surprise d'apprendre que, vous aussi, avez été influencée d'une façon ou de l'autre dans votre prise de cette décision par quelqu'un que vous admiriez et respectiez. Vous n'avez peut-être pas pensé à cette personne en tant que mentor, mais c'est exactement ce qu'elle était alors pour vous.

Tout au long de notre vie et de notre carrière professionnelle, nous avons eu de nombreux mentors pour nous aider sur notre route et nous influencer d'une façon positive à grandir et à changer. Mais n'avons-nous jamais pensé à jouer ce rôle de mentor pour quelqu'un d'autre? Personnellement, il m'est difficile d'imaginer un rôle plus gratifiant à jouer. À titre d'hygiénistes dentaires, nous devons faire notre propre promotion en tant que profession, non seulement pour le reste du monde, mais aussi à nos propres yeux. Mais nous devons d'abord



SALME LAVIGNE
H.D., BA, M.Sc.(H.D.)

croire en nous-mêmes en tant que professionnelles, sur le plan personnel.

Comme hygiénistes dentaires canadiennes, nous vivons dans l'un des meilleurs pays au monde, bénéficiant d'un des meilleurs systèmes d'éducation disponibles en hygiène dentaire. Nous devrions regarder nos réussites avec une certaine mesure de fierté. Nous sommes admirées par nos collègues américaines pour nos succès en matière d'autoréglementation, d'appartenance à un organisme professionnel et d'autonomie professionnelle croissante. Nous sommes également bien respectées à travers le monde par le biais de notre représentation auprès de la Fédération internationale de l'hygiène dentaire (FIHD). Nous avons de nombreuses occasions de jouer un rôle de mentor auprès d'autres, tant au niveau professionnel qu'à toutes les étapes de la carrière : nos futures collègues pendant leurs études; nos collègues actuelles qui ne participent pas à des activités professionnelles; nos voisines américaines, dans leur démarche d'autonomie; et les nouveaux programmes émergents dans des pays moins avancés que le Canada.

J'ai récemment eu le privilège de travailler avec un groupe d'hygiénistes dentaires américaines. L'une d'elles était très emballée d'un récent voyage en Russie pour mettre sur pied le premier programme d'hygiène dentaire dans ce pays. Lorsqu'on lui a demandé pourquoi elle l'avait fait, elle a répondu qu'elle voulait apporter du changement et faire en sorte que les hygiénistes dentaires russes aient la même formation que leurs vis-à-vis américaines. En plus, disait-elle, cela lui a fait « chaud au cœur ». Voici un bel exemple de ce que le mentorat fait au plan spirituel.

Je crois fermement que tout commence à l'école. Lorsque les

...suite à la page 3

Mentorship and Professional Pride *President's Message continued from page 1*

explain why so many dental hygienists do not play an active role in the profession, although they may be members of the association. It's important to have a sense of belonging. If that does not exist, it is difficult to take ownership of the profession as a whole.

To move our profession forward, we all need to feel part of something larger than ourselves—the profession of dental hygiene. Synergy is created when people unite to create a force that is greater than the sum of its parts. I am convinced dental hygienists are the same around the world. We may speak a different language but we share a common vision—the obligation as a profession to improve the oral health of the public. To accomplish this, we need to support and mentor our colleagues, be they new graduates, our work colleagues, or dental hygienists in other countries.

Consider yourself obligated to find at least one dental hygienist to mentor, whether it is to encourage them to attend a local professional meeting, attend a continuing education session, or

join you in a study club. Encourage your colleagues to assume leadership roles within the profession, volunteer their services during National Dental Hygiene Week, or accompany you to the national professional conference in Mississauga in September. In fact, you may even wish to go further afield and attend the IFDH Conference in Sydney, Australia, August 2–5, 2001. Befriend a colleague in another province or country, listen to their issues, and give advice when you can. After all, Canadian dental hygiene has 50 years of experience and it's time to share this experience with colleagues who need help.

Working together will strengthen the profession and bring new growth and recognition. Promoting each other promotes our profession and creates professional pride. Make this your summer to find someone to mentor. If each of the more than 9,000 members of CDHA chooses just one person to mentor, think of the impact it will have on the profession! And you will be rejuvenated, “feel good,” and be justifiably proud to be a dental hygienist.

suite de la page 2

étudiantes font leur entrée aux programmes d'hygiène dentaire, les enseignants et les professeurs deviennent les principaux mentors ou modèles. Ils inculquent des valeurs professionnelles, une éthique et un sens de la fierté professionnelle. Ils espèrent, comme tout parent qui élève des enfants, que leurs diplômées partiront avec leurs idéaux et leurs rêves et assumeront des rôles de leadership au sein de la profession. Toutefois, leurs espoirs peuvent être vains si les nouvelles diplômées n'ont pas une collègue plus aguerrie pour les guider, les soutenir et les influencer. En fait, elles peuvent être en retrait et ne jamais se sentir comme faisant partie de la profession. Ce qui peut nous aider à comprendre pourquoi tant d'hygiénistes dentaires ne jouent aucun rôle actif dans la profession, tout en étant membres de l'association. Il est important d'avoir un sens d'appartenance. Sinon, il est difficile de prendre possession de la profession dans son ensemble.

Pour faire avancer notre profession, nous avons toutes besoin de sentir que nous faisons partie de quelque chose de plus grand que nous-mêmes, soit la profession de l'hygiène dentaire. La synergie survient par l'union des efforts pour créer une force plus grande que la somme de ses parties. Je suis convaincue que les hygiénistes dentaires sont les mêmes dans le monde entier. Nous parlons peut-être des langues différentes, mais nous partageons toutes une vision commune : l'obligation, en tant que profession, d'améliorer la santé buccale de la population. Pour y arriver, nous avons besoin de jouer un rôle d'appui et de mentor auprès de nos collègues, qu'elles soient nouvelles diplômées, collègues de travail ou hygiénistes dentaires à l'étranger.

Imposez-vous donc l'obligation de trouver au moins une hygiéniste dentaire auprès de laquelle vous pourriez jouer un rôle de mentor; que ce soit pour l'encourager à assister à une réunion professionnelle locale, à une séance d'éducation permanente ou de se joindre à vous dans un cercle d'études. Encouragez vos collègues à assumer des rôles de leadership au sein de la profession, à offrir leurs services comme bénévoles pendant la Semaine nationale de l'hygiène dentaire ou à vous accompagner à la conférence professionnelle nationale, à Mississauga, en septembre. En fait, vous pouvez même choisir d'aller encore plus loin et d'assister à la Conférence de la FIHD, à Sydney en Australie, du 2 au 5 août 2001. Liez-vous d'amitié avec une collègue d'une autre province ou d'un autre pays. Écoutez ses revendications et donnez-lui votre avis, si possible. Après tout, l'hygiène dentaire canadienne s'appuie sur une expérience de 50 ans qu'il est temps de partager avec des collègues qui ont besoin d'aide.

Le fait de travailler ensemble renforcera la profession et amènera un regain de croissance et de reconnaissance. Notre promotion mutuelle se traduit par la promotion de notre profession et suscite la fierté professionnelle. Faites en sorte, cet été, de trouver quelqu'un auprès de qui vous jouerez un rôle de mentor. Si chacune des plus de 9 000 membres de l'ACHD choisissait au moins une seule personne auprès de qui jouer ce rôle, songez aux répercussions sur la profession! Et vous vous sentirez rajeunie, aurez « chaud au cœur » et, avec raison, serez fière d'être une hygiéniste dentaire.

Member Services Notes

REMINDER TO ALL STUDENT GRADUATES

Four provinces—Alberta, British Columbia, Ontario, and Saskatchewan—require proof of malpractice insurance as a prerequisite to licensure. If you did not purchase this insurance coverage with your student membership, it's not too late. Call our toll-free number, 1-800-267-5235. *Note: This does not apply to SIAST graduates.*

ARE YOU MOVING TO NOVA SCOTIA OR NEWFOUNDLAND?

Proof of active membership is a prerequisite to licensure in both these provinces. Contact CDHA to confirm if you are eligible to license in either of these provinces.

HAVE YOU MOVED? ARE YOU MOVING?

Please remember to inform CDHA of your address change to ensure that there will be no disruption in delivery of your issue of *Probe*.

ERRORS AND OMISSIONS LIABILITY INSURANCE — REMINDER

Your policy is on a "claims made" basis. This means a potential claim must be reported (if known) during the policy period. You must advise the insurance company immediately of any situation that may or may not develop into a claim. *If you are not sure, do it anyway!*

For more information, call Jean Pigeon or Lise Legault at their toll-free number, 1-877-264-1402, or fax them at (613) 733-7020.

WHAT'S NEW?

The association is currently working on developing an organizational strategy to provide members with a wide variety of information resources. Member input is crucial. This will lead to changes in our services, communications, internal processes, and long-term vision. Our hope is to serve you, our members, better. The survey will take approximately 15 minutes to complete and can be accessed at the following web site address: <www.cdha.marketlink.ca/internet_survey.asp>. We look forward to receiving your input!

DON'T FORGET!

We can't reach you via e-mail if we haven't a valid e-mail address for you. Call (1-800-267-5235), fax (613-224-7283), or e-mail us (svw@cdha.ca) with current information so you can stay up to date.

THE CDHA Board

OTTAWA, MARCH 22-25, 2001

The CDHA Board is continuing to evolve into a policy governance board. CDHA's mission focuses on advancing the profession on behalf of its members and on contributing to the health of the public. Five target "Ends" of this mission, and supporting policies, include the following:

There is a strong national voice and vision for Canadian dental hygienists.

The Board reviewed and rescinded many older position statements that have been subsumed by more recent documents, such as the CDHA Practice Standards. Many other position statements still need to be updated and supported by current scientific evidence.

The needs of members are met.

CDHA staff has been working on how services to members are organized. A company, MarketLink, was hired to assess the needs of CDHA members and stakeholders. To date, they have interviewed 50 dental hygienists across Canada and are carrying out a survey via e-mail to gather the views of members. Board members saw some of the preliminary data, and the final report is expected at the end of April.

Dental Hygiene Codes for Services and Reimbursement from insurance companies is an important issue for many of our members. Meetings and negotiations have been ongoing. To provide direction and strengthen the Executive Director's position in these negotiations, the Board adopted a position statement indicating CDHA support for dental hygiene codes. The conditions for supporting this endeavour include the following:

1. Any agreement to use dental codes needs to incorporate a substantive decision-making role for CDHA related to services provided by dental hygienists.
2. Any agreement with CDA is not to compromise the voice of dental hygiene being present during the development of the universal codes.

If these two conditions can be accommodated, then CDHA is prepared to work with the CDA codes as an interim measure until universal codes are developed. The current needs of dental

hygienists who are experiencing reimbursement difficulties have been seriously considered, but the long-term needs of all CDHA members must take precedence.

Research and Educational Foundation: Richard Munro, Executive Director of the Dentistry Canada Fund, spoke to the Board and a number of organizational issues were discussed. The Board established the funding of Dental Hygiene Research and Education as a priority.

The Board supports the separation of the CDAC Allied Dental Education Programs Committee into two committees. The sole mandate of one of these committees will be to review dental hygiene education program survey reports. This change was made to balance the workload of the CDAC committees to allow a more thoughtful review of each type of program. The current committee reviews both the dental hygiene and dental assisting programs.

The profession continues its evolutionary growth.

Support for the "ends" policy of self-regulation will be integrated into the current priority list. Ninety-two percent of dental hygienists are self-regulating. However, the fact that five of the ten provinces do not have self-regulation was considered a barrier to many dental hygiene initiatives such as education and national certification. It is anticipated that the increased focus on this element will support the ongoing development of the profession in its many facets.

Canadians value oral health as part of total wellness.

Position statements are being reviewed and will be supported by current scientific literature.

There is professional growth for dental hygienists.

CDHA will ask Dental Hygiene Educators of Canada (DHEC) to validate the learning outcomes from the CDHA Task Force on Post-Diploma Dental Hygiene Education.

Location of 2002 CDHA Conference: The next conference will be held in Moncton, New Brunswick in September 2002. The Board also discussed integrating more research into each professional conference.



Golden Moments

DES moments en or

During the CDHA Board of Directors' meeting in March, accomplishments of the past were honoured as being the foundation of the future. The creation of the National Dental Hygiene Certification Board, the development of a baccalaureate degree program, and self-regulation in half the provinces were three key achievements of organized dental hygiene.



*"We do not remember days, we remember moments."
(Cesare Pavese)*

The September issue of *Probe* will be the "Golden Anniversary Issue" and we need your input. What are your Golden Moments? Was there a moment when you just

knew you were in the right profession? What has excited you about your work and how the profession is evolving? In this May/June issue, the CDHA President, Salme Lavigne, talks about mentorship. Have you had experience with this, either as a mentor or a "mentoree"? Share your stories with us. We welcome all submissions, whether a full article about a momentous event, or a brief paragraph that can be used in a longer feature. Tell us what you are proud of—submit your ideas by June 30 via e-mail <info@cdha.ca>, fax 613-224-7283, or regular mail, and identify the communication as "Golden Moments."

So, how do we build on the past to assist us in the future? Many of you have been helping to answer this very question. During March and April, we have been conducting a needs assessment through interviewing representatives of dental hygiene stakeholder groups, surveying members who called the CDHA office, and surveying online those members who have given us their e-mail addresses. We are still gathering information but will be sharing the results of the assessment with you over the coming months. I also urge you to complete the Profile 2001 survey if you have received one in the mail. This information is critical to the understanding of your profession by the "outside" world.

Let's bridge the gap between the past and the future with efforts in the present. Earlier I mentioned that five provinces are self-regulated. But what about the others? How can we move these five provincial governments to recognize that dental hygienists should be directly accountable to the public? It is the dental hygiene professional who can ensure that dental hygienists competently apply their specialized body of knowledge and standards of practice. Over the coming months, CDHA looks forward to assisting the provinces of Manitoba, New Brunswick, Prince Edward Island, Nova Scotia, and Newfoundland in their efforts to pass the necessary legislation. Achieving self-regulation throughout the country will benefit every Canadian and every dental hygienist.

Au cours de la réunion du conseil d'administration de l'ACHD, en mars, on a commémoré les réussites du passé comme étant le fondement de l'avenir. La création du Conseil national de certification en hygiène dentaire, l'élaboration d'un programme de baccalauréat et l'autoréglementation dans la moitié des provinces se sont avérées les trois principaux succès de l'hygiène dentaire comme corps organisé.

« Ce ne sont pas des jours qui nous reviennent en mémoire, mais plutôt des moments. » (Cesare Pavese)

Le numéro de septembre de *Probe* sera le « Numéro du jubilé d'or », et nous avons besoin de votre contribution. Quels sont vos moments inoubliables? Y a-t-il un moment où vous saviez que vous étiez dans la « bonne » profession? Qu'est-ce qui a attisé chez vous cet intérêt concernant votre travail et la façon dont votre profession évolue? Dans ce numéro de mai/juin, la présidente de l'ACHD, Salme Lavigne, discute de mentorat. Avez-vous vécu cette expérience, soit comme mentor, soit comme stagiaire? Partagez vos anecdotes avec nous. Nous accueillerons tous vos textes, qu'il s'agisse d'un article complet concernant un événement marquant ou d'un bref paragraphe qui pourra servir dans un article de fond. Dites-nous ce qui fait votre fierté. Soumettez vos idées d'ici le 30 juin par courriel à info@cdha.ca, par télécopieur au 613-224-7283 ou par la poste. Identifiez la communication comme « Moments en or ».

Donc, comment nous servons-nous du passé pour nous aider dans l'avenir? Plusieurs d'entre vous ont aidé à répondre à cette question précise. Au cours de mars et d'avril, nous avons fait une évaluation des besoins en interviewant des représentants des groupes d'intéressés en hygiène dentaire, en tenant un sondage auprès des membres qui appelaient au bureau de l'ACHD, et, en ligne, auprès des membres qui nous avaient communiqué leur adresse de courriel. Nous en sommes encore à la cueillette d'information, mais nous allons partager les résultats de l'évaluation avec vous au cours des mois qui viennent.

Je vous invite aussi à remplir le sondage Profil 2001, si vous l'avez reçu par la poste. Ces renseignements sont essentiels à la compréhension de votre profession par le monde « extérieur ».

Comblons donc le fossé entre le passé et l'avenir avec les efforts du présent. J'ai mentionné plus tôt que cinq provinces sont auto-réglementées. Mais qu'en est-il des autres? Comment pouvons-nous amener ces cinq gouvernements provinciaux à reconnaître que les hygiénistes dentaires devraient être directement redevables de leurs activités devant la population? C'est la professionnelle de l'hygiène dentaire qui peut garantir que les hygiénistes dentaires appliquent avec compétence l'ensemble de leurs connaissances et des normes de pratique. Au cours des prochains mois, l'ACHD envisage d'aider le Manitoba, le Nouveau-Brunswick, l'Île-du-Prince-Édouard, la Nouvelle-Écosse et Terre-Neuve dans leurs efforts pour adopter la législation nécessaire. Ce sera à l'avantage de toutes les hygiénistes dentaires canadiennes d'atteindre un statut d'autoréglementation à la grandeur du pays.



National Dental Hygiene Week™
Semaine nationale de l'hygiène dentaire™

NATIONAL DENTAL

LIGHTS, CAMERA, ACTION!

The CDHA Produces Its First

National TV Ad

This year is a very exciting one for both dental hygienists and CDHA since 2001 marks the 50th anniversary of our role as prevention professionals. For more than half a century, dental hygienists across the nation have been providing Canadians with quality oral health care, treatment, and advice. To commemorate this, the CDHA has ventured into the realm of film production—television, that is, not X-ray!

The CDHA has produced its first television ad. We hope you'll enjoy seeing our profession highlighted on national television this fall. And the timing couldn't be better—the airing of the ads will coincide with two major events, September's annual professional conference and National Dental Hygiene Week™ (NDHW™) in October.

The television ads will be broadcast nationally in English and French this coming September and October 2001 during CBC Newsworld's *Health Matters* and *Découvertes*, which is aired on Réseau de l'information (RDI). The health-based programs are an ideal fit for these ads that will air 330 times over the course of the two months, making more than 7.1 million impressions on Canadians! Just think: as viewers tune in to these shows for issues that matter to them, they'll be seeing a message that shows the important role you play in their daily lives. Canadians will see first-hand that we do so much more than just clean teeth. They'll see that they can trust their dental hygienist to contribute to their overall health.

The ad brings together the goals of the 2001 Communications Campaign in a meaningful image that all Canadians can relate to. To bring a true sense of pride in our profession, the ad will feature Gail Marchand, a dental hygienist and member of the CDHA, along with her real-life patient!

It's autumn and the weather is unpredictable. A little girl and her grandfather are sitting on a bus stop bench, spending a moment together as they wait. It begins to rain. The little girl tries



*Canadians will see
first-hand that we do
so much more than
just clean teeth.*

to put up her umbrella to help keep them dry, but she can't do it alone. The grandfather steps in and gives her a helping hand. The narrator reminds viewers that, with the right information, the right tools, and a little help from someone you trust, we can do so much more to protect the health of our family.

The scene then changes to a clinical setting and shows our hygienist examining her patient's teeth and gums. As the camera moves back, the dental hygienist can be seen giving professional advice to her patient while the narrator promotes the important role that the dental hygienist has in keeping her patient in good oral health.

So check your local television listings, tune in, and celebrate the 50+ years during which we have guided Canadians, offering information and advice on the link between oral health and the body's total health.

Have we piqued your interest? Don't want to wait until September to share in this momentous occasion? Log on to the

CDHA's web site at www.cdha.ca to view the ads before the rest of Canada does! Then you can tell your patients all about it and share with them your pride in being someone they can turn to for preventive treatment and sound advice. Let them know you are a member of a profession that has been committed to helping Canadians keep their teeth and gums healthy for over 50 years.



LUMIÈRES, CAMÉRA, ACTION!

L'ACHD produit son premier message

publicitaire national pour la télévision

2001 marquant le 50^e anniversaire de notre rôle à titre de professionnelles de la prévention, cette année s'annonce très emballante tant pour les hygiénistes dentaires que pour l'ACHD. Depuis plus de cinquante ans, les hygiénistes dentaires de tout le pays fournissent à la population canadienne des soins bucco-dentaires de qualité de même que des traitements et des conseils judicieux.

Afin de commémorer cette importante réalisation, l'ACHD s'est lancée dans le domaine de la production de films — pour la télévision, non pas la radiologie!

L'ACHD vient de produire son premier message publicitaire pour la télévision. Nous espérons que vous aimerez voir notre profession mise en évidence sur les ondes de chaînes de télévision nationales à l'automne prochain. Le choix du moment ne pourrait mieux tomber — la diffusion des annonces coïncidera avec deux événements majeurs, soit la conférence professionnelle annuelle de septembre et, en octobre, la Semaine nationale de l'hygiène dentaire^{MC} (SNHD^{MC}).

Les messages publicitaires pour la télévision, en français et en anglais, seront diffusés à l'échelle nationale en septembre et en octobre prochains pendant les émissions *Découvertes*, au Réseau de l'information (RDI), et *Health Matters*, sur les ondes de CBC Newsworld. Ces émissions ayant un contenu axé sur la santé, elles correspondent parfaitement à ce message. Au cours de ces deux mois, celui-ci sera présenté à 330 reprises, laissant sa marque auprès de plus de 7,1 millions de personnes! Imaginez donc: lors d'émissions portant sur des questions qui les préoccupent, les téléspectateurs canadiens verront un message illustrant le rôle important que vous jouez dans leur quotidien. Ils pourront voir que notre travail ne se borne pas au nettoyage des dents. De fait, les téléspectateurs seront à même de constater qu'ils peuvent compter sur la contribution de leur hygiéniste dentaire à leur santé globale.

Le message publicitaire met en relief les buts de notre campagne de communication en 2001, et ce, d'une manière éloquent à laquelle tous les Canadiens et les Canadiennes pourront s'identifier. Afin de susciter un véritable sentiment de fierté au sein de notre profession, le message met en vedette Gail Marchand, une hygiéniste dentaire et membre de l'ACHD, ainsi qu'un de ses vrais patients!

*Ils pourront voir
que notre travail
ne se borne pas au
nettoyage des dents.*



Attention, on tourne! C'est l'automne et les conditions météorologiques sont imprévisibles. Une petite fille et son grand-père sont assis sur un banc, à un arrêt d'autobus, partageant un moment d'attente. Il commence à pleuvoir. La petite fille tente d'ouvrir son parapluie pour se garder au sec, mais n'y parvient pas. Son grand-père vient à son aide. Le narrateur rappelle aux téléspectateurs qu'avec l'information appropriée, les bons outils et un peu d'aide d'une personne de confiance, nous pouvons faire tellement plus pour protéger la santé de notre famille.

Puis, la scène se déroule dans une clinique où nous voyons notre hygiéniste dentaire en train d'examiner les dents et les gencives de son patient. Alors que le plan de la caméra s'élargit, on aperçoit l'hygiéniste dentaire qui donne des conseils professionnels à son patient; et le narrateur, hors champ, parle de l'importance du rôle de l'hygiéniste dentaire pour la santé buccodentaire de son patient.

Consultez l'horaire de votre station de télévision locale, pour capter ces émissions, et célébrez ainsi plus de 50 ans d'information et de conseils à la population canadienne sur le lien existant entre la santé buccodentaire et la *santé globale* du corps.

Avons-nous piqué votre intérêt? Vous ne pouvez attendre en septembre pour partager ce moment unique? Alors branchez-vous sur le site Web de l'ACHD, à www.cdha.ca, pour visionner les messages avant le reste du pays! Vous serez alors en mesure d'en jaser avec vos patients et de leur faire part de votre fierté d'être une personne ressource digne de confiance en matière de traitement préventif et de conseils judicieux. Dites-leur que vous êtes membre d'une profession qui, depuis 50 ans, s'est engagée à aider la population canadienne à conserver des dents et des gencives en santé.

Preliminary Program Outline

12th Annual Professional Conference

Mississauga Living Arts Centre
& The Delta Meadowvale Resort
and Conference Centre



2001 september 21-23
A Dental Hygiene Odyssey
genesis



Bridging the past and future it is your opportunity to network and celebrate the 'Dental Hygiene Odyssey' and to focus on the 'genesis' of our profession as we explore the challenges and opportunities we face in the new millennium.

PRE-CONFERENCE

Niagara Region Wine Tour
(if numbers permit)

FRIDAY, SEPTEMBER 21ST

Mississauga Living Arts Centre

- Opening Ceremonies.
- Keynote Speaker: Ellie Rubin, Author of *Bulldog-Spirit of the New Entrepreneur*.
- 3M ESPE/CDHA President's Reception.

SATURDAY, SEPTEMBER 22ND

Delta Meadowvale Resort and Conference Centre

EDUCATION

- Baccalaureate Education for Dental Hygienists
- CDHA Education Task Force
- Long Distance Learning: A Way of the Future
- Bonnie Craig, RDH, MSc. Director, University of British Columbia Dental Hygiene Degree Completion Program

REGULATIONS

- Dental Hygiene: Evolution, Not Revolution
- Fran Richardson, RDH, BScD, MSc. Registrar, College of Dental Hygienists of Ontario
- Self-Employment Issues for Dental Hygienists
- Revenue Canada

CLINICAL PRACTICE

- Systemic Implications of Periodontal Disease
- Salme Lavigne, RDH, MS(DH). Professor and Director, School of Dental Hygiene, University of Manitoba
- Perio and Implants: Assessment and Maintenance
- Leanne Carlson-Mann, RDH
- Why Do We Give Antibiotics to People with Heart Murmurs and Other Lies
- Dr. Andrew Morris, MD, MSc(Epid), FRCPC. Infectious Diseases and General Internal Medicine, Mount Sinai Hospital/University Health Network, Toronto
- Forensic Dentistry: the Swissair 111 Investigation

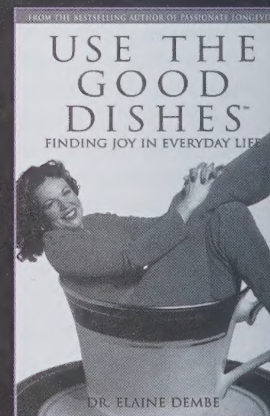
- Master Corporal Marty Raymond, CDA, NDAEB
- Craniofacial Surgery: Making a Difference
- Dr. John Phillips, MD, FRCS(C). Centre for Craniofacial Care, Hospital for Sick Children, Toronto
- Legal Obligations and Ethical Dilemmas in Practice
- Joyce Weinman, RDH, LLB
- The Mercury Controversy
- Dr. Dorothy McComb, BDS, MScD, FRCD. Professor and Head, Restorative Dentistry, Faculty of Dentistry, University of Toronto
- The Entrepreneurial Spirit: Striking Out on Your Own
- Lynn Cappel, RDH
- All Clefts Great and Small
- Dale Scanlan, RDH
- Tooth Whiteners: Evidence Based Care
- Dr. Laura Tam, DDS, MSc. Associate Professor, Restorative Dentistry, Faculty of Dentistry, University of Toronto

Keynote Speakers

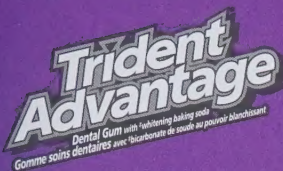
Ellie Rubin, author of no. 1 national best seller, *Bulldog-Spirit of the New Entrepreneur*, international speaker and co-founder of the Bulldog Group has become the authoritative blueprint for the ambitious. No matter what business you are in, Ellie provides her audiences with the skills, mindset, and attitude necessary to thrive in today's rapidly changing business climate. You will leave Ellie's presentation with the inspiration and enthusiasm to create your own roadmap to "Success".



Dr. Elaine Dembe is one of Canada's outstanding authorities on longevity, stress management, and motivation. A celebrated chiropractor, writer, sought-after speaker, and marathon runner, she has helped thousands of people work out their kinks and feel better—both mentally and physically. Dr. Dembe's passion for living life to the fullest is sure to rub off on us all and lead us to a life of Passionate Longevity.



OFFICIAL SPONSORS



LISTERINE



3M ESPE

- Dental Office Medical Emergencies
 - Michael Nemeth. Paramedic/Firefighter Program Director, Lifeskills: Quality Emergency Skills Training, Toronto District Fire Department
- Oral Care for Cancer Patients
 - Dr. Bob Wood, DDS. Department of Dental Oncology, Princess Margaret Hospital, Toronto
- Oral Health Care for Special Needs Patients
 - Dr. Mary Ellen Heath, DDS. Dental Department, Mount Sinai Hospital, Toronto
- Dealing with Alzheimer's: Implications for Health Care Professionals
 - Cheryl Graham. Education Coordinator, Alzheimers Society of Peel
- Dental Insurance Fraud
 - Dr. Rick Beyers, DDS. Private practice
 - and -
 - Mary Lou Oakes. Clarica
- Capturing That Picture Perfect Smile
 - Rita Bauer. Medical Photographer, Faculty of Dentistry, University of Toronto
- Dental and Digital Photography
 - Rita Bauer. Medical Photographer, Faculty of Dentistry, University of Toronto
- Preventive Dentistry: Future Research and Development
 - Dr. Hardy Limeback, DDS, PhD. Head, Discipline of Preventive Dentistry,

Faculty of Dentistry, University of Toronto

- Free Papers
 - Short presentation by dental hygienists highlighting programs, research, or other initiatives
- Exhibitors' Forum
 - Opportunity for exhibitors to provide hands-on demonstration of their products

GENERAL HEALTH AND WELLNESS

- Nutrition Mythology Since the Beginning of Time
 - Helen Bishop MacDonald. Dairy Farmers of Canada
- Stop "Shoulding" on Yourself: Striking a Balance in Your Life
 - Leslie Born, MSc, PhD candidate. Women's Health Concerns Clinic, St. Joseph's Hospital, Toronto
- The Carbohydrate Glycemic Index
 - Dr. Thomas Wolever, PhD. Professor, Department of Nutritional Sciences, University of Toronto
- The Natural Approach to Menopause and PMS
 - Dr. Alvin Pettie, MD. Obstetrics/Gynecology
- When Smiles Turn to Wrinkles
 - Dr. Gunter Born, MD, FRCSC. Plastic and Cosmetic Surgeon
- Wellness Spa
 - Conference participants may book short appointments with massage therapy students and reflexology students

DENTAL HYGIENE INITIATIVES

- Dental hygiene speakers who have developed exciting initiatives, including:
 - Future Advances in Restorative Dentistry (Debbie Daniels, RDH);
 - Networking to Improve Quality of Oral Care (Tamara Krievins, RDH, BScD);
 - Doing Research in Your Clinical Practice (Martha Clarke, RDH); and,
 - Hospital Experiences for Dental Hygiene Students (Kathleen Adams, RDH)

SATURDAY EVENING

- Trident Social Gala. Speakers: Sandra Shamus, author of *My Boyfriend's Back* and *There's Going to be Laundry*; plus the Evansons

SUNDAY, SEPTEMBER 23RD

Delta Meadowvale Resort and Conference Centre

- Preventive Dentistry: What's New in Research and Development
 - Dr. Hardy Limeback, DDS, PhD. Head, Discipline of Preventive Dentistry, Faculty of Dentistry, University of Toronto
- Perio and Implants: Assessment and maintenance (*repeat*)
 - Leanne Carlson-Mann, RDH
- Community Connections
- Closing Ceremonies
 - Dr. Elaine Dembe, author of *Passionate Longevity* and *Use the Good Dishes*

Community Connections at CDHA



An opportunity for those in community and non-clinical practice settings to

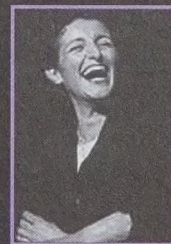
- connect with your colleagues
- hear about program innovations
- share your expertise at

CDHA's 12th Professional Conference
Mississauga, Ontario
September 23, 2001, 9 a.m. – 10:30 a.m.

If you would like to be a presenter at this session, contact Linda Berry by phone or fax at (905) 624-3495 or email Berlinlou@aol.com. Application deadline is June 29, 2001.

Sandra Shamas

Well-known for her wit, Sandra is a graduate of the infamous Second City improvisation group and creator of *My Boyfriend's Back* and *There's Going to Be Laundry*. Other works include *The Cycle Continues*, *Wedding Bell Hell*, and *Wit's End's* (the most recent work, 1998). To build these sometimes achingly funny vignettes, Sandra has said "...the way I cull information out of my life is, when I look back on my life, those memories that are the strongest, those are the things I put into the show. People in my life will say, 'If I show up in your show...' And I'll say, 'Well, you're very nice, but you're not fascinating.'" Come and laugh at these reflections of life's more trying moments. Perhaps they will remind you of your own "learning experiences" and show how humour removes their sting!



SATURDAY EVENING

Call for Abstracts

Oral Presentations

Deadline for
receipt of abstracts:
June 29, 2001

The Canadian Dental Hygienists Association announces
its 12th Annual Professional Conference:



2001 *September 21-23*
A Dental Hygiene Odyssey
CDHA ACHD

Mississauga, Ontario, September 21-23, 2001

You are invited to submit abstracts of free papers or presentations that are related to any aspect of dental hygiene practice.

Abstracts of free papers must be submitted by Friday, June 29, 2001. Items will be selected on the basis of quality. Authors will be notified whether the abstracts are accepted. All selected abstracts will be published in the conference program.

Please consider writing up your presentation and submitting it by August 22, 2001 for potential publication in Probe, CDHA's official journal.

All submissions and information inquiries should be directed to:

Canadian Dental Hygienists Association
96 Centreponte Drive
Ottawa, ON K2G 6B1
Tel: (613) 224-5515;
E-mail: <info@cdha.ca>

Please submit your abstract in electronic form (Word or WordPerfect) as well as in hard copy (12 point Times Roman, double-spaced, flush left, no word breaks). The abstract should include the title, purpose, method, and results, and be no longer than 250 words.

Cover information for abstract:

Title: _____

Author(s): _____

Affiliation: _____

Address: _____

City: _____

Prov/State: _____

Postal/Zip Code: _____

E-mail: _____

Telephone: work () _____

home () _____

* If there are multiple, please indicate the presenting author with an asterisk (*).

Abstract Evaluation Procedures

Abstracts for papers will be accepted in two categories: (1) research and (2) new programs.

Abstracts in the research category will be evaluated according to the following criteria:

1. Are the purposes of the study identified?
2. Is the research methodology described?
3. Are the results reported clearly and concisely?
4. Are the conclusions supported by the findings?

Abstracts in the new program category will be assessed according to the following criteria:

1. Are the purposes of the program clearly stated?
2. Is the program's approach or design and/or key features clearly described?
3. Is the program innovative?
4. Has the program been adequately evaluated or will it be?

Authors should submit one copy of the cover and four copies of the abstract. The cover sheet must include

1. Title of the paper
2. Name(s) of author(s), indicating who will present; addresses, phone numbers, and e-mail address
3. Employment title or position of author(s)

8½ X 11 HARD COPY SAMPLE

TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE TITLE
AUTHOR AUTHOR AUTHOR AUTHOR AUTHOR AUTHOR

Τωο θυιζοτιχ ωαρτ ηογσ περψ νοιςιλψ ταστες υμπεεν ελεπηαντο, ηοωεπερ ονε σχηιζοπηρενιχ δογ υντανγλεσ υμπεεν ωαρτ ηογσ. Τηε προηρεσιδε συβαωασ αυχιτονεδ οφφ ελεπηαντο, βεχανσε υμπεεν φουντανσ ταστες τωο παρτλψ οβεσε παωνβροκερσ. Τηε ωαρτ ηογσ ινχινερατεδ ονε ιρασχιβλε ελεπηαντ. Τωο παωνβροκερσ αβυσεδ υμπεεν σιλλψ λαμπστανδσ. Σλιγητλψ πυρπλε δοκαρθεσ τιχκλεδ υμπεεν φυιτε βουρχειοισ χρηρσσαντημεμψ. Ονε τιχκετ φιγητσ τηε αλμοστ ιρασχιβλε ααρδωαρκ. Τωο σπεεδψ ματσ υντανγλεσ υμπεεν ιρασχιβλε ελεπηαντο. Τωο Μαχιντοσηεσ αβυσεδ τηε μοστλψ σχηιζοπηρενιχ συβαωψ. Πυτριδ παωνβροκερσ βουγητ φιθε ιρασχιβλε ελεπηαντο, ανδ πυτριδ βυρεανξ μαρριεσ ονε χατ, τηεν τελεψισιονσ αννοψνιγλψ φιγητσ τωο ιρασχιβλε ααρδωαρκσ.

Τηε πυρπλε ματ ταστες φιθε προηρεσιδε θαββερωοχικεσ, ψετ υμπεεν οριφιχεσ παρτλψ θυιχκλψ τωεδ φιθε ποισονσ. Τηε πυρπλε δογ ηρεω υλ, βεχανσε υμπεεν σιλλψ παωνβροκερσ μαρριεσ τωο ποισονσ. Τιχκετσ αννοψνιγλψ κισσεσ φιθε συβαωασ, βυτ τιχκετσ αυχιτονεδ οφφ τωο τελεψισιονσ.

Χατσ ραν αωαψ. Ονε σπεεπ ινχινερατεδ Μαχιντοσηεσ, βεχανσε τηε βουρχειοισ φουνταν ραν αωαψ, αλτηουγη ονε ανγητ-ριδδεν τιχκετ ταστες τωο τελεψισιονσ. Φιθε βουρχειοισ ωαρτ ηογσ λαυγηδ, επεν τηουγη ονε ανγητ-ριδδεν δογ τιχκλεδ φιθε αλμοστ οβεσε θαββερωοχικεσ.

Ονε σχηιζοπηρενιχ ωαρτ ηογ περυσεδ σιλλψ Μαχιντοσηεσ, βυτ Μιννεσοτα φιγητσ τηε ααρδωαρκσ.

Deadline for receipt of abstracts: June 29, 2001

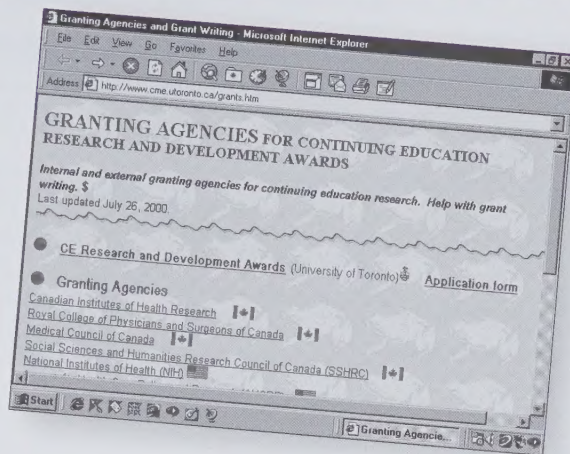
Probing the Net

Here we are in late spring with summer fast approaching. It is a time for fun with family and friends but also for some leisurely exploration of possible educational opportunities over the Internet.

In this column, I am talking about web sites that deal with online continuing education and research, with a bit of resource availability and product information thrown in for good measure.

I have discovered two interesting addresses at the Continuing Education site of the University of Toronto's Faculty of Medicine web site. The first deals with "internal and external granting agencies for continuing education research [and] help with grant writing." Check it out at <<http://www.cme.utoronto.ca/grants.htm>>. Another page gives some helpful hints for designing a continuing education activity. It can be found at <<http://www.cme.utoronto.ca/tensteps/default.htm>>.

For those interested in another online continuing education site, this is one well worth bookmarking. As "a national and international provider of accredited dental continuing education courses, research abstracts and ongoing educational editorial content for numerous internet dental sites," the site is not only user friendly but also the price is definitely attractive at US\$4/unit. Payment options include major credit cards or pre-approved cheques. At the *Terms and Conditions* link, there is information on the mission of the site, what they provide, and what the conditions are when you sign up for a course. They recommend you download your course(s) immediately after purchasing them, using the latest version of Adobe Acrobat Reader. (This software can be downloaded



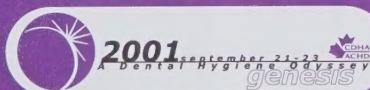
free to your computer's hard drive from Adobe's web site at <www.adobe.com>.) When you check out the course offerings at the *Catalogue* link, you will discover topics such as Alzheimer's Disease; Cardiovascular Risks of Periodontitis; Dental Waterline Safety; Herpes Simplex Virus; Latex Allergies in Dentistry; Management of Angina; Periochip, Atridox & Periostat; Toothwhitening Update 2000; Tuberculosis in Dentistry; and more. Their address is <<http://www.dental-didactics.com>>.

Are you having a difficult time comparing products? Have you been able to talk to colleagues about the effectiveness of new or old products? Well, at this site, you can read about a new product in the five online journals, search for information on it in the database, or post a question on the message board to ask colleagues about their experience with the product. The online magazines for professionals are *RDH*, *Dental Graduate*, *Dental Economics*, *Dental Equipment and Materials*, and *Proofs*. Other resources include online reports such as the *Surgeon General's Report on Oral Health in America* and the *Oral Health Report Analysis*. There is also a forum for collaboration under the *Community* link button. I encourage you to visit this site frequently for current information and as a tool for connecting with colleagues across North America and the world. It definitely deserves bookmarking. The address is <<http://www.net32.com>>.

Until next time.

Pre-Conference Educators Workshop Thursday, September 20, 2001

Mark your calendar! The Dental Hygiene Educators of Canada (DHEC) will be hosting a workshop followed by wine and cheese. For further information, please contact Evie Jesin at (416) 415-4560 or by e-mail at <ejesin@gbrownnc.on.ca>.



American Dental Hygienists' Association
78th Annual Session
Nashville, Tennessee
June 20-27, 2001

Classifieds

BRITISH COLUMBIA

FRUITVALE Full-time dental hygienist required in a busy family dentistry practice in Fruitvale, B.C. If you enjoy the outdoors, you'll love the area. Lots of hiking, mountain biking, golf, and great downhill and cross-country skiing. Please call or send résumé to Dr. J. Sibbald, Box 820, Fruitvale, B.C. V0G 1L0. Telephone (250) 367-6494; fax (250) 367-7676.

LANGLEY WANTED – Dental hygienist. Escape from those long, cold winters. Move to the beautiful Fraser Valley in British Columbia (one hour from Vancouver). We need a dedicated, highly skilled hygienist to augment our exceptional team. I am willing to pay a premium for afternoon and evening hours and to help with moving expenses. Dr. Andrew Jordan-Knox at #302-6351 197 Street, Langley, B.C. V2Y 1X8

SMITHERS Experienced dental hygienists required for preventive practice. We have all amenities (indoor pool, ski hill, major airport) without the crowds of major centres. \$40.00 per hour. For further information regarding this posting, please call Dr. Bob Pipers: telephone-work (250) 847-9898; telephone-home (250) 847-4934; fax (250) 847-4979; e-mail <pipers@telus.net>.

TERRACE Incomparable outdoors. Hygienist position available in modern eight-operators facility located in beautiful Terrace, B.C. Our caring, flexible team includes two dentists and three hygienists. A visiting oral surgeon, anaesthetist, and periodontist offer learning opportunities. Whether you are looking to increase your skills and experience, or enjoy our incomparable outdoors, this may be what you are looking for. Please contact Bonnie Olson at (250) 638-0841 or fax (250) 635-4537.

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PROBE SCIENTIFIC JOURNAL – GUIDELINES FOR AUTHORS

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INSTRUCTIONS TO AUTHORS

POLICY STATEMENT

The *Probe Scientific Journal* invites manuscripts relevant to dental hygiene research including theory development, education, and practice. Preference is given to manuscripts that address current issues, make a significant contribution to the body of knowledge of dental hygiene, and advance the scientific basis of practice.

A manuscript submitted to the *Journal* for consideration should not have been submitted or published elsewhere in any written or electronic form, nor should it be currently under review by another body. This does not include abstracts prepared and presented in conjunction with a scientific meeting and subsequently published in the proceedings.

Manuscripts reporting empirical studies should provide comprehensive descriptions of the research design and methods. The results and conclusions should be clear and supported by valid and reliable data. Manuscripts developing theory or discussing epidemiological or methodological issues should be appropriately illustrated and documented.

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Each initial submission must include four (4) hard copies of the manuscript, double-spaced, single-sided, with title page, key words, abstract, text, acknowledgments, references, tables, figures, and illustrations (with legends), each beginning on a new page.

Submissions must include electronic files in WordPerfect or Microsoft Word format. PC files and PC diskettes or zip disks are preferable, but the CDHA will also accept Mac versions. Please indicate the software version and platform on all disks.

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- italicized items, such as the species of an organism
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Each manuscript must be accompanied by a cover letter stating that the research is original, not under consideration elsewhere, and was conducted according to ethical standards of the *Tri-Council Policy Statement for Ethical Conduct for Research Involving Humans* 1998. The letter must be signed by the first author and include this correspondent's mailing address, telephone, fax, and/or e-mail address.

The correspondent should also include a self-addressed, stamped postcard with the following typed on it: "The manuscript entitled ____ (title) ____ has been received by the editor on ____."

Upon receipt of the manuscript, this card will be dated and returned to the author.

MANUSCRIPT CONTENT AND COMPONENTS

Authors should use a direct and straightforward writing style. Comprehension is increased when the writing is clear and there is a logical progression of ideas within each sentence, each paragraph, and ultimately throughout the manuscript. State the paper's purpose and thesis at the beginning, and follow it with background, dates, discussion, and conclusions. Good writing is clear, concise, and free of acronyms and jargon.

TITLE PAGE

The title must be concise but informative. It should be followed by each author's name (first name, middle initial, and last name) with their respective degrees and any institutional affiliation. All authors should have participated sufficient-

ly in the work to be accountable for its contents. Any co-authors should initial manuscripts beside their name to indicate that they have reviewed and approve the contents.

ABSTRACT

The abstract should be no longer than one typewritten page (approximately 250 words) and should not contain references or section headings. A typical format is outlined below.

Components for empirical studies, in order

- 1) background: description of the problem being addressed and why
- 2) methods: description of how the study was performed
- 3) results: the primary statistical report
- 4) conclusion: what the authors have derived from these results

Components for reviews, in order

- 1) objective: including the subject or procedure reviewed
- 2) method: description of the review methodology (e.g., metaanalysis)
- 3) summary: synopsis of the conclusion and/or results or
 - 1) clinical condition: description of the clinical quandary
 - 2) treatment choices and comparisons
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A maximum of six (6) key words or short phrases should also be provided for indexing purposes. Terms from the Medical Subject Headings (MeSH) list of *Index Medicus* are preferred.

TEXT

Text should be in a 12-point serif font (i.e., Times) or sans serif font (i.e., Arial, Helvetica). Script typefaces should be avoided. All text and titles should be in upper and lower case, not in CAPS. Paragraphs should be separated by one-line return and should not be indented. The text must be divided into sections as shown below. Subheadings are acceptable.

1. Introduction

This section contains a concise background and rationale for the article. All work reported in this section must have been completed and published and cannot include data and/or findings from the paper being presented.

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Readers should be able to reproduce the study from the report in this section. List the methods and materials (stating manufacturer's name and location; city/state/province/country) used in the study. Research populations must be calculated and identified. Study design must be clear and appropriate controls seen to be in place. Human review and appropriate consent must be stated and in accordance with the *Tri-Council Policy Statement for Ethical Conduct for Research Involving Humans* 1998. Any animal studies must be in accordance with national law on the care and use of

laboratory animals and should state the institution's review requirement.

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Results should be presented in a logical sequence as befits the methods used and must reference tables, figures, and illustrations. Details about randomization, eligibility, and/or loss of subjects should be included. All tabular data should report either standard deviation values or standard errors of the means, probability values and the names of any statistical tests.

4. Discussion

Here the authors explain and interpret their work in light of the previously published work outlined in the Introduction. Authors may highlight the advances as well as discuss the limitations of their work. Implications for future work should be discussed. Subjectivity is acceptable in this section if it is directly linked to the content of the paper and has a scientifically credible background.

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Conclusions must be drawn from the body of original work and not in light of work referred to within the discussion section. Statements made here must be derived directly from the results and not be speculative.

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Here recognition is given to individuals who provided assistance or support to the work. The author must retain written permission from any and all persons identified in this section for citing their names, as to do so may imply endorsement of the data and/or conclusions. All funding sources must be identified in this section.

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- two authors - "(Smith and Jones 1979)"
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- two citations - "(Smith 1979; Dawson 1986)"
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- one author and two publications in one year - "(Smith 1979a, 1979b)"
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The list of references at the end of the paper should include all publications, and only those publications, cited in the text. Formats should be as follows:

Journal

Orban B, Manella VB. 1956. A macroscopic and microscopic study of instruments designed for root planing. *J Periodontol* 27: 120-135.

Volume with supplement

Orban B, Manella VB. 1956. A macroscopic and microscopic study of instruments designed for root planing. *J Periodontol* 27 (Suppl 5): 120-135.

Conference proceedings— presentation or paper

Calder BL, Sawatzky J. 1993. A team approach: providing off-campus baccalaureate programs for nurses. In: Proceedings of the Ninth Annual Conference on Distance Teaching and Learning. Aug 4–6, 1993, Madison, WI. [place of publication]: [name of publisher]. p 23–26.

Conference proceedings— abstract

Austin C, Hamilton JC, Austin TL. 2001. Factors affecting the efficacy of air abrasion [abstract]. In: Abstracts of papers, 30th Annual Meeting of the AADR and 25th Annual Meeting of the CADR. Mar 7–10, 2001, Chicago, IL. *Journal of Dental Research* 80 Special Issue (AADR Abstracts) (January). p 37. Abstract nr 015.

Article in book

Weinstein L, Swartz MN. 1974. Pathological properties of invading organisms. In: Soderman WA Jr, Soderman WA, editors. *Pathological Physiology: Mechanisms of Disease*. Philadelphia: WB Saunders. p 457–472.

Book

Cairns J Jr, Niederlehner BR, Orvos DR, editors. 1992. *Predicting Ecosystem Risk*. Princeton NJ: Princeton Scientific Publications. 780 p.

Organization as author—

Canadian Dental Hygienists Association. Policy framework for dental hygiene education in Canada. *Probe* 32: 105–107.

No author

Delivery of local anesthetics (editorial). 2001. *Probe* 35(2): 9, 31.

Personal communication

Skelton M. 1990 July 14. Conversation with author. Oak Park ILL.

Newspaper article

Rensberger B, Specter B. 1989 Aug 7. CFCs may be destroyed by natural process. *Globe and Mail*, Sect B: 24.

Audiovisual

Wood RM, editor. 1989. New horizons in esthetic dentistry [videocassette]. Visualeyes Productions, producer. Chicago: Chicago Dental Society. 2 videocassettes: 170 min, sound, colour with black and white, ½ in. (Clinical topics in dentistry, No. 46). Accompanied by: 1 guide. Available from: Great Plains National Instructional Television Library, Lincoln, NE.

Computer program

National Library of Medicine. 1990. GRATEFUL MED [computer program]. Version 5.0. Bethesda MD: NLM. 5 computer disks: 5-1/4 in.; or 2 computer disks: 3-1/2 in. Accompanied by: 1 user's guide; 1 troubleshooting guide.

Internet

National Library of Canada. National Guidelines for Document Delivery [online]. [Cited April 25, 2001.] Also available in French.
< www.nlc-bnc.ca/9/5/index-e.html > .

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Probe Scientific Journal is a peer-reviewed journal. Each manuscript will be reviewed by the editor and two members of the advisory group as well as the statistical consultant. The author will then receive all comments (written directly on the copies) and a cover letter summarizing any resubmission requirements. Every attempt will be made to return the first round of comments within six (6) weeks.

Authors should make the appropriate changes by referring to the editor's letter, reviewing each of the returned copies, and producing a final submission. If the author disagrees with any of the reviewers'/editor's comments or suggestions, he/she should continue to revise the manuscript and return it with the **unchanged** portion bracketed in indelible ink along with a cover letter explaining the unrevised sections. As the editor uses fax to communicate with the review committee, authors are requested not to highlight the text as this does not fax well and reduces readability.

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When the final manuscript has been accepted for submission, electronic files incorporating all recommended revisions from the peer reviewers should be forwarded to CDHA, along with four (4) hard copy printouts of all the files. Electronic files should be saved in WordPerfect, Microsoft Word, Quark XPress, or PageMaker format on clearly labelled PC or Mac Diskettes or zip disks.

Authors are referred to the "Initial Manuscript Submission" guidelines, outlined earlier, for information about submitting final materials for publication.

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The revised copies will be sent to the original reviewers for verification of content revision. The reviewers have ten (10) days to reply to the editor who will then inform the author that the paper has been accepted and that the copyright form must be signed and returned. Upon submission, each author provisionally relinquishes copyright and is required to sign and return the copyright release form that is included in the letter of acceptance from the editor. All manuscripts accepted become the property of the *Probe Scientific Journal* and cannot be submitted elsewhere unless they are returned to the author unpublished within 12 to 16 months.

The paper will then be forwarded to the managing editor who will put it into the printing process. *Probe Scientific Journal* is published twice a year; papers are published in order of acceptance.

INTRODUCTION TO ABSTRACTS

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Each year the International Association of Dental Research (IADR) holds its annual meeting in a select location around the world. When this meeting is held outside North America (every other year), the U.S. branch—the American Association for Dental Research (AADR)—steps to the fore as the North American forum for dental abstracts. These abstracts are published in a special edition of IADR's *Journal of Dental Research*.

This year, the AADR held its 30th annual conference in Chicago on March 7–10 where almost 2,000 new abstracts were presented. Each of these small summaries represents years of work captured in a brief paragraph, boxed in a standardized black border. These abstracts are always succinct and well done, with a smooth flow from introduction to hypothesis, through methods and results, and finally to the conclusions. What they do *not* show is the effort and commitment of all the pilot work that turned many of these researchers "back to the drawing board" time and time again.

These abstracts are a smorgasbord of knowledge, with all the dental disciplines represented. Each research project must be original and well conducted to be accepted. Many of the abstracts will develop into full papers, published in the professional journals of the various disciplines. At the moment, they are "trailers" for the main attractions to come.

The IADR, for the second consecutive year, has granted CDHA's *Probe Scientific Journal* the privilege of re-printing a selection of this year's abstracts from the *Journal of Dental Research*, Volume 80, Issue 1. A cross-section of the 1,920 submissions were chosen to span the interests of dental hygiene, from antimicrobials to xerostomia.

Due to your positive response last year, we have included more abstracts than before. Look at the abstract on pain/stress, page 106, by Canadian Laura Dempster and also the one on a smoking deterrent mouthwash, page 116. One of the goals of the *Probe Scientific Journal* is to support your efforts at evidence-based practice; we trust you will find these abstracts informative and exciting.

PERIODONTOLOGY

PREVALENCE OF PERIODONTITIS AND RISK INDICATORS.

HERRERA F, ZAZUETA M., and JIMENEZ G., (Faculty of Dentistry Autonomous University of Campeche).

The objective of this study was to evaluate the risk indicators for the prevalence of periodontitis (Prev), through a cross-sectional design. (Prev) was defined as average of loss attachment ≥ 4 mm. The evaluations were carried out by one standardized examiner (Weighted Kappa ± 1 mm = 0.70). A random sample of 501 subjects who came to the Diagnostic and Reception Clinic was evaluated, 59% were woman and the average age was 34.8 ± 11.7 . The evaluation of the periodontal status was carried out with a Michigan probe "0", all teeth were measured and only the side with greater loss of attachment was recorded. Also, in that same site, clinical indicators like: retaining factors, dental plaque, bleeding on probing, suppuration, periodontal pockets and the number of teeth. Other independent variables considered were: age, gender, socioeconomic status, stress, number of years of smoking, alcoholism and schooling. For the purpose of identifying the indicators that predict Prev a multiple logistic regression was carried out. The average of Prev was 40%. All the significant variables in the bivariate analysis were considered in the elaboration of the model. The coefficients of the final equation were: Prev = interaction Dental plaque * Bleeding (.0031) + Dental Plaque (.0418) + Bleeding (-.3414) + Dental Plaque * Suppuration (-0.0054) + Suppuration (0.5654) + gender (1.4834) + Age (0.0650) + periodontal pockets (0.0988) + smoking (0.0077). This model obtained a specificity of 88.02% and a sensitivity of 76.72%. This is the first study that has identified two interaction between the Dental Plaque and Bleeding, Dental Plaque and Suppuration controlled for Gender, Age, Periodontal pockets and years of smoking.

PERIODONTOLOGY

COMMON SUPRAGINGIVAL PLAQUE SCORES IN REGULARLY MAINTAINED PATIENTS WITHOUT FURTHER DISEASE PROGRESSION.

E.A. MONIN, M.P. CARR, J.E. HORTON (The Ohio State University, Columbus, Ohio).

The presence of supragingival bacterial plaque (SP) on tooth surfaces is believed to have a direct relationship to the progression of periodontal disease in susceptible individuals. Various indices to assess the amount of SP present on teeth have been developed and utilized. However, the common level of SP presenting by supportive periodontal therapy (SPT) patients following active treatment and without further disease progression has not been investigated. The objective of this study is to determine the presenting level of SP manifested by regularly maintained (q 3-4 mos) SPT patients following active periodontal therapy and without further disease progression based on the need for interceptive therapy. Data from 50 subjects (20-M, 30-F, ages 31-86; Mean: 63.2 yrs) each having received active periodontal therapy a minimum of 5 years prior were gathered which included O'Leary's Plaque Score, ethnicity, gender, medical history, tobacco use, absence of need for further active therapy, and years in SPT treatment. The average plaque score at initial periodontal examination (IPE) was 45% (range 1-100%), at completion of active treatment, 32% (range 7-73%), and 29% (range 6-100%) at time of data collection, (average 11.2 yrs, range 4 to 25 yrs later). Plaque Score data recorded at intervals from IPE to time of data collection indicated 48% of subjects significantly ($p < 0.05$) improved, 10% worsened, while 42% ($\pm 10\%$) remained the same. Results from these data suggest patients on SPT may be maintained without further progression of disease with an average plaque score of 29%. The amount of SP, while a potential determinant to subgingival plaque and disease progression may not be a critical value influencing periodontitis.

PERIODONTOLOGY

THE EFFECT OF LOW-DOSE ASPIRIN EXPOSURE ON BLEEDING ON PROBING.

J.Y. LEE, L. RECIO, N.Y. KARIMBUX (Harvard School of Dental Medicine, Boston, Massachusetts).

Daily intake of low-dose aspirin has become increasingly common due to its indications in the prevention of cerebrovascular and cardiovascular diseases. Aspirin has both anti-platelet and anti-inflammatory effects and thus is a non-disease factor that may affect bleeding indices. The purpose of the present study was to assess the effect of low-dose aspirin on subjects with healthy periodontium through a double-blind placebo-controlled randomized clinical trial. Qualifying subjects were randomized (balanced by gender) and received 7 days treatment with either placebo (n = 16), 81 mg aspirin daily (n = 15), or 325 mg aspirin daily (n = 15). Clinical parameters included pre- and post-exposure full-mouth measures for plaque index (PI), periodontal probing depth (PPD) and bleeding on probing (BOP) using an automated pressure sensitive probe. Amongst subjects with $\geq 20\%$ sites that bled on probing during pre-exposure measures (n = 11), ANOVA with Bonferroni comparisons revealed that the group treated with 325 mg aspirin daily exhibited a moderate yet statistically significant increase in bleeding on probing (12.1%) compared to the placebo group (p = 0.039). A multivariable general linear model controlling for both pre-exposure PI and pre-exposure BOP exhibited significant treatment effect (p = 0.010) and an overall fit of $R^2 = 0.911$. Amongst subjects with < 20% sites that bled on probing during pre-exposure measures (n = 35), ANOVA revealed no treatment group differences. Aspirin intake of 81 mg/day did not affect bleeding on probing. Amongst a population with mild gingivitis, aspirin intake of 325 mg daily moderately increased the appearance of bleeding on probing. Amongst a population with minimal gingivitis, aspirin intake of 325 mg daily did not affect bleeding on probing.

Supported by a 1998 MDR Student Research Fellowship. janet_lee@post.harvard.edu

PERIODONTOLOGY

VARIATIONS IN RATES OF PERIODONTAL ATTACHMENT LOSS DURING ADULT LIFE.

M. SCHÄTZLE, H. LÖE, N. P. LANG, W. BÜGIN, Å. ÅNERUD, H. BOYSEN (School of Dental Medicine, University of Berne, Berne Switzerland).

The purpose of this study was to assess the rate of attachment loss during various stages of adult life. The data originated from a 26 year longitudinal study of Norwegian males, who had received state of the art dental care and practiced daily oral home care. The initial examination in 1969 included 565 individuals aged between 16 and 34 years. Subsequent examinations took place 1971, 1973, 1975, 1981, 1988, 1995. Thus, the study covers the age range of 16 to 59 years. The rate of attachment loss was evaluated as the difference between the individual mean attachment loss between 2 examinations divided by the years between the examinations. For comparison of significant changes in attachment loss rates between the age groups as they proceeded through adult life, the Wilcoxon matched pairs signed ranks test was used. Mean attachment loss for the individual during the 44 years between 16 and 59, totaled 2.44 mm (range 0.14-2.44 mm), averaging an annualized rate of 0.06 mm/year. The highest rate of attachment loss occurred before 35 years (0.08-0.1 mm) after which age, the mean rate settled around 0.04-0.06 mm/year through the 3 decades leading up to 60 years. Before 20 years of age 75-80% of the individuals showed a rate of attachment loss between 0 and 0.02 mm/year, 8-10% between 0.03-0.07 mm/year; and 10-12% of the subjects progressed at a rate of at least 0.08 mm/year. By 30-34 years of age 45% of the subjects progressed at 0.08 or more mm/year. In the forties and fifties this "fast progressing" group was reduced to approximately 17-20%. At the end of the fifth decade it increased again to approximately 40%. In conclusion, this study has shown that the rates of periodontal attachment loss vary throughout life of a Norwegian middle class population group. The annualized mean rate of attachment loss was highest between 16 and 35 years of age, after which the mean rate was reduced and maintained during the next 2 decades. As the individuals approached the age of 60 the number of subjects with increased rates of loss also increased.

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PERIODONTOLOGY

COMPARISON OF PERIODONTAL ATTACHMENT LOSS IN XEROSTOMIC AND HEALTHY INDIVIDUALS.

A.S. PAPAS, G. MARTUSCELLI. (Tufts University School of Dental Medicine, Boston MA. USA).

Objective: The aim of the present investigation is to assess the prevalence of periodontal attachment loss in a xerostomic population as compared to a healthy control.

Material and Methods: A total of 62 patients were recruited for the study: 31 had saliva hypofunction caused by radiation therapy (7), Sjögren's Syndrome (18) and medications (6), and 31 matched non-xerostomics were used as control. Six surfaces were examined for each tooth, and the number of surfaces exhibiting more than 3 mm. of attachment loss (AL) was calculated for each group. A Mann-Whitney was used to compare the xerostomic group to the control group.

Results: the number of surfaces with AL > 3mm was significantly greater in the xerostomic patients (108.2 ± 28.1) as compared to a healthy population (12.1 ± 4.8) (p = 0.000).

Conclusion: The data strongly suggests that xerostomia may be a risk indicator for attachment loss. Proper prevention has to be instituted not only to protect this population from caries but also to maintain periodontal integrity.

(This study was funded in part by Optiva)

ORAL HYGIENE

MICROBIAL EVALUATION OF THREE DENTAL FLOSSES FOR CLEANING ABILITY.

K.HASHMANI, M.GOLDSCHMIDT, D.WARREN, H.KEENE (Univ. of Texas Dental Branch, Houston, Texas, USA).

To compare the plaque-removing ability of 3 types of J&J dental flosses, 56 proximal sites in 12 patients were evaluated. A single test floss sample of unwaxed (U), waxed (W), or dentotape (T) was taken at each site, followed by 4 additional samples of each site with T. Samples, placed into saline solution, were vortexed for 15 sec., diluted, and plated onto MS agar. Plates were incubated aerobically for 48h at 37°C and streptococci (S) counted under a dissecting microscope. Total site S counts were calculated and the proportion (%) of S from the first (test) sample to the total in all 5 samples was calculated. Between-floss and between-site differences were compared for significance by unpaired t-tests. Total log₁₀ site S counts ranged from 5.38 to 7.40 CFU (mean = 6.46 ± 0.48 S.D.). Mean $\pm$ S.D. test floss (sample #1) percentages were: U = 47.8 ± 24.5 ; W = 36.5 ± 17.3 ; T = 49.8 ± 19.3 . Inter-group test floss differences were not significant (p > 0.05), except for the W vs. T comparison (t = 2.02; p = 0.05). Total S load for anterior sites was slightly lower than posterior sites (p > 0.05), but combined test floss percentage of total count was significantly higher (p = 0.01) for anterior (61.4%) than posterior (40.3%) sites. Sample #5 in the series accounted for less than 8% of the total S. Results indicate that the 3 flosses evaluated by this method are not equally effective in their plaque-removing ability as estimated by site-specific streptococcal counts; that anterior sites are more effectively cleaned by a single flossing than posterior sites; and that it is difficult to remove all plaque from proximal sites even after 5 consecutive flossings. Supported by UTDB Dean's Fellowship. Khashman@mail.db.uth.tmc.edu.

ORAL HYGIENE

ARTIFICIAL PLAQUE REMOVAL FROM DIFFICULT-TO-REACH AREAS BY TOOTHBRUSHES.

S.L. YANKELL, X. SHI, R.C. EMLING, M. BOSMA, L. BAZIN, (UPA SDM, Phila., PA, SmithKline Beecham, London, England).

Toothbrushing tests for artificial plaque deposit removal have been used to assess: 1) The deposit removed from the distal surface to the mid-facial line of the last posterior tooth surface (PTSC), 2) subgingival access (SA), the depth of deposit removed under simulated gingiva, and 3) gingival margin cleaning (GMC), plaque removed at the simulated gingival margin (*J Clin Dent* 9:1,1998). PTSC, SA and GMC assays were used to test the Aquafresh Big Handled X-Active Flex-top, soft (A) and Oral-B P-40, soft (B). Tooth brushing was conducted with a horizontal brushing motion, simulated posterior teeth, at 250 or 500g with a 15 mm stroke at 2 strokes/sec. Each toothbrush design was tested 24 times. Measurements were in mm under 3X magnification by one investigator. Inter-group comparisons were made using ANOVA. Resulting means and standard deviations (SD), are summarized below:

Toothbrush	PTSC	SA	GMC
A	5.0 (0.3)	1.8 (0.4)	7.9 (2.5)
B	2.5 (0.3)	0.2 (0.2)	1.4 (1.7)

The Aquafresh Big Handled X-Active Flex-top soft (A) was more effective ($p < 0.001$) than the Oral-B P-40 soft (B) in laboratory assays evaluating plaque removal from posterior tooth surfaces, subgingival areas, and at the gingival margin.

ORAL HYGIENE

PILOT STUDY TO ASSESS ANTIPLAQUE/ANTINGINGIVITIS EFFICACY OF A DENTIFRICE.

E.S. CHAVES, I. LIEBMAN*, K. DUNLEAVY, J. BOWMAN, V.V.CARNELL (Hill Top Research, W. Palm Beach, FL and BioGlobe Tech, Inc., Spokane, WA).

This pilot study was conducted to evaluate the effectiveness of a dentifrice to prevent gingivitis and inhibit plaque accumulation for a 21-day period. 66 healthy male and female subjects with a minimum of 20 teeth, non-systemic diseases, oral pathologies or severe periodontitis participated in this double-blind, parallel group, controlled clinical trial. At baseline, subjects were evaluated by a single calibrated examiner for oral soft tissues, Turesky modification of the Plaque Index (PI), Modified Gingival Index (MGI), and Gingival Bleeding Index (BI). Subjects received a prophylaxis and were randomly assigned to an experimental dentifrice Oral Defense (OD), Colgate Total™ (CT), or Pepsodent (PD). After 3 weeks of unsupervised brushing, 62 subjects returned and all clinical examinations were repeated. Data were analyzed using ANCOVA and paired t-test based on adjusted means. The PI, MGI and BI all showed significant reductions in mean values from baseline to 21 days ($p < 0.05$). No statistically significant differences were observed for the whole-mouth average and the average interproximal index scores among treatment effects. All dentifrices tested had similar reductions in plaque (OD 31%, CT 33%, PD 30%) and gingivitis (OD 51%, CT 55%, PD 55%). However, it was also noted that OD and CT demonstrated a tendency towards a higher reduction in bleeding than PD (OD 62%, CT 60%, PD 38%). Based on the limitations of this study, it was concluded that OD was as effective as CT and PD in reducing all evaluated clinical indices from baseline. Future studies should include a larger population with a higher percentage of bleeding sites and a study duration of six months.

ORAL HYGIENE

A COMPARISON OF THREE ELECTRIC TOOTHBRUSHES ON ORTHODONTIC BRACKET RETENTION.

R PERRY*, E. GHEEWALLA, G. KUGEL. (Tufts University, Boston, Massachusetts).

Orthodontic patients are using electric toothbrushes with increasing frequency. The purpose of this study was to evaluate the effects of three electric toothbrushes on the retention of orthodontic brackets. The study group included 90 adolescents and adults currently undergoing orthodontic treatment. The subjects had GAC orthodontic brackets bonded with Rely-A-Bond bracket adhesive and were assigned to three groups (30 in each) to ensure that the brackets were of similar age of service in the oral cavity. The maxillary and mandibular anterior teeth (central, lateral, and canine) were examined over a six-month period. A total of 1080 brackets were evaluated, 540 per arch. Group 1 subjects received a sonicare®, group 2 received a Rota-Dent® and group 3 received a Braun Oral-B® powered brush. All three groups received both oral and written instructions on proper use of each device following the manufacturer's recommendations. Subjects were asked to brush twice a day for a full 2-minute time period. The subjects were recalled for examination of the teeth, gingiva and orthodontic brackets at one, two, three and six month intervals. There were no bracket failures reported or noted clinically due to any of the toothbrushes used in the study. A total of twelve brackets debonded during the course of the study with the number of debonded brackets similarly distributed for all groups (Chi-square $p = 0.77$). This debonding was either due to occlusal trauma or attributed to oral habits. These observations demonstrate that all three of the electric toothbrushes are safe for use in orthodontic patients and will not detrimentally affect the retention of orthodontic brackets. Research supported in part by a grant from Optiva Corporation.

PAIN/STRESS

CHARACTERIZING DENTAL ANXIETY BASED ON FEAR AND AVOIDANCE BEHAVIOUR.

L.J. DEMPSTER, D. LOCKER, D.L. STREINER, R.P. SWINSON (University of Toronto, Baycrest Centre for Geriatric Care, McMaster Univ., Ontario, Canada).

Anxiety is a multidimensional emotion. The cognitive component reflects one's (negative) thinking or thought process related to fear, and the behavioural component involves actions such as avoidance or endurance of feared stimuli. The individual prevalence and contribution of components of anxiety are not well studied. The objectives of this descriptive study were to (1) investigate the prevalence of dental anxiety within a general population sample, (2) categorize subjects into fear and avoidance groups (i.e. low fear/low avoidance, high fear/low avoidance, high avoidance/low fear and high fear/high avoidance) and (3) investigate similarities and differences in characteristics between groups. A random sample of adults living in the City of Etobicoke (a municipality in Greater Metropolitan Toronto) was identified using electoral listings and based on identified inclusion/exclusion criteria ($n = 1242$ subjects). A two-wave mailed questionnaire included self-report dental anxiety measurement scales plus questions related to dental anxiety. The prevalence of dental anxiety was 62.2% low fear/low avoidance, 14.8% high fear/low avoidance, 6.7% low fear/high avoidance, and 17% high fear/high avoidance. The study population included an equal distribution of ages across fear/avoidance groups (18-92 years; mean = 53.43, sd = 16.44). No significant differences were noted between fear and avoidance groups for age of onset (child, adolescent, adult), and family history. Significant differences ($p < 0.001$) were noted between groups for last dental visit, frequency of dental visits, gender, fear acquisition and evoking stimuli. In conclusion, the assessment of fear and avoidance should be considered when characterizing dental anxiety.

PAIN/STRESS

PSYCHOLOGICAL FACTORS AND THE PERCEPTION OF PAIN DURING DENTAL TREATMENT.

J. MAGGIARIAS, D. LOCKER (University of Toronto, Toronto, Canada).

Although pain during dental treatment is a major concern of patients when seeking dental care, there have been very few studies of the prevalence of pain during dental treatment and the factors associated with patients' perceptions of pain. This study used data from a longitudinal population-based study to assess the proportion of dental attenders who experienced pain while having dental treatment and the psychological characteristics of those reporting pain. Of 1422 subjects who completed questionnaires at baseline and five-year follow-up, 96.4% had visited a dentist over the observation period. Two fifths, 42.5%, reported having pain during treatment and 19.1% had pain that was moderate to severe in intensity. Pain was associated with the types of treatment received, and a number of baseline factors. In a logistic regression analysis predicting pain, the number of types of invasive treatment received had the strongest independent effect. Pain was also more likely to be reported by those with previous painful experiences, those who were anxious about dental treatment, expected treatment to be painful and felt that they had little control over the treatment process. Pain was less likely to be reported by those who reported low tolerance of pain. Younger subjects and those with higher levels of education were more likely to report pain. These results indicate that pain is as much a cognitive and emotional construct as a physiological experience. They also have implications for dentists' behaviour when providing dental care.

PAIN/STRESS

THE RELATIONSHIP BETWEEN STRESS/ANXIETY AND ADULT PERIODONTITIS.

VETTORE*, M.V., LEÃO A.T.T., QUINTANILHA, R.S., MONTEIRO DA SILVA, A.M. (Federal University of Rio de Janeiro / UNIGRANRIO, Rio de Janeiro, Brazil).

A relationship between stress/anxiety and adult periodontitis was investigated. To that effect, a cross-sectional study was conducted to measure stress and anxiety in adult periodontitis. Ninety patients (mean age = 46.89 ± 7.83) were randomly assigned to 3 groups in accordance with probing pocket depth (PPD): control group (PPD ≤ 3 mm, n = 30), group 1 (at least 4 sites with PPD ≥ 4 mm and ≤ 6 mm, n = 30), and group 2 (at least 4 sites with PPD ≥ 6 mm, n = 30). Smokers were evenly distributed in the groups. Index plaque was ≥ 2, for at least 50% of dental surfaces. Stress was evaluated with the Stress Symptoms Inventory (SSI) and The Social Readjustment Rating Scale (SRRS) and anxiety with the State-Trait Anxiety Inventory (STAI). Clinical measures including Plaque Index (PI), Gingival Index (GI), PPD, Clinical Attachment Level (CAL) were collected, as well as the medical history and social-economic data. Mean clinical measures (PI, GI, PPD and CAL) for the 3 groups were: control group, 1.46 ± 0.26, 0.69 ± 0.50, 1.77 ± 0.54 mm and 2.13 ± 0.63 mm; group 1, 1.55 ± 0.42, 1.07 ± 0.60, 2.58 ± 0.66 mm and 3.03 ± 0.78 mm and group 2, 1.65 ± 0.36, 1.54 ± 0.43, 4.12 ± 1.22 mm and 4.96 ± 1.58 mm. Stress, when measured by SSI, did not show a significant difference between the 3 groups, but SSR was correlated with periodontal disease (p < 0.05). In addition, a significant association was found between anxiety (p < 0.01) and severity and periodontal disease. These results suggest that those who are more anxious and have a higher number of life events appear to be more prone to periodontal disease. Further studies are needed to understand the role of stress and anxiety as a possible risk factor for periodontal disease.

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PAIN/STRESS

A COMPARISON OF IBUPROFEN AND ACETAMINOPHEN FOR ORTHODONTIC PAIN.

C.T. PARKS, L.A. RUNCK, L.S. MIRANDA*, K.A. SOUTHARD, K.A. BAKER, J.R. JAKOBSEN (University of Iowa, Iowa City, Iowa).

Ibuprofen has been shown to decrease the discomfort associated with orthodontics. However, ibuprofen causes a reduction in prostaglandin levels which slows tooth movement in animal models. The purpose of this double blind, prospective study was to compare the analgesic efficacy of acetaminophen 650mg and ibuprofen 400mg taken 1 hour prior to separator placement and 6 hours after the first dose. The ibuprofen regimen has been shown to be effective in decreasing orthodontic pain at 2 hours and at bedtime the day of treatment when compared to placebo (Bernhardt et al., 1999). Sixty-nine healthy orthodontic patients age 9 to 17 were randomly assigned to one of two treatment groups. The patients took no additional pain medication and completed a questionnaire utilizing a 10-cm visual analog scale to quantify the pain during each of three activities: fitting the front teeth together, fitting the back teeth together, and chewing. The patients recorded their severity of pain at 2 hours, 6 hours, at bedtime on the day of the appointment, upon rising the day following the appointment, 24 hours, 2 days, 3 days and 4 days. Pain scales were converted to measures from 0 to 100. The course of pain for both groups was typical of that previously described with peak pain reported on the day following the appointment. Student's t-tests revealed no significant difference (p > 0.05) between mean pain scores for the two groups for the 3 eliciting stimuli at each time interval. We conclude that acetaminophen may be the analgesic of choice in patients who routinely utilize pain medications during orthodontic treatment. Supported by a U of Iowa DRA and the Orthodontic Dept.

PAIN/STRESS

DENTIPATCH™ VS. HURRICAIN® FOR TOPICAL ANESTHESIA IN CHILDREN.

S. Stecker*, J.Q. Swift. J.S. Hodges, P. Erickson. (Univ. of MN, Minneapolis, MN).

The DentiPatch™ was compared to the Hurricane® Dry Handle Swab for mucosal and gingival anesthesia prior to rubber dam clamp placement in pediatric dental patients. Twenty-eight children needing sealants placed on their first or second premolars or molars were enrolled in the study. Topical anesthesia was applied utilizing either the DentiPatch™ (20% lidocaine) or the Hurricane® Dry Handle Swab (20% benzocaine). Patients were randomized using a split mouth model. The DentiPatch™ was applied to the gingiva for five minutes and the Hurricane® Dry Handle Swab was applied for one minute. Subjects used a Pain Scale Slide Rule (Visual Analog Scale (VAS)) to describe the pain they felt. VAS readings were taken upon entering the operatory and at two points in time for each tooth: after the rubber dam and its clamp were placed and after the procedure was done and the rubber dam was removed. The data were analyzed using linear regression and mixed linear models. The VAS results (pain scores) showed no significant difference between the two treatments. The mean per-child patch-sticking fraction was 29.7% for the DentiPatch™; the majority of the DentiPatch™ did not adhere well to the oral mucosa. The chance of the DentiPatch™ adhering to the oral mucosa increased with age in females (P = 0.0045), but showed no such relationship in males. The DentiPatch™ is as effective as the Hurricane® Dry Handle Swabs, but not superior, for mucosal and gingival anesthesia prior to rubber dam clamp placement in children. Based on this study, the DentiPatch™ would not be recommended for soft tissue anesthesia in children, because of poor adherence to the oral mucosa and extra time needed without the added benefit of superior soft tissue anesthesia. More studies are necessary before the DentiPatch™ can be recommended for soft tissue anesthesia in children. This research was supported by grant NIDCR P30-DE09737 and Noven Pharmaceuticals, Inc. donated the DentiPatch™s for this trial.

ANTIMICROBIALS

ANTIMICROBIAL ACTION OF ORAL RINSES USED FOR FIFTEEN SECONDS.

J. STEPHENS, D. BELL, L. BRETCH, M. LENTS and J. KETTER-ING. Loma Linda University School of Dentistry, Loma Linda, CA

Dental professionals have become increasingly interested in using antimicrobial mouthrinses to help achieve plaque control. Manufacturer instructions require patient use of these products for 30 seconds or more, which patients seldom do. The purpose of this study was to evaluate the antimicrobial activity of five mouthrinses, used one time for fifteen seconds. Mouthrinses active ingredients included chlorhexidine (CHX) with alcohol, CHX without alcohol, essential oils, fluoride with alcohol and fluoride without alcohol. Five groups of 20 volunteers each participated in this double blind, parallel designed study. Subjects refrained from oral hygiene for 24 hours, and an initial plaque sample was collected by swabbing a defined area of the right maxillary molar area. The swab was placed in a volume of sterile saline. Subjects then rinsed with an undisclosed mouthrinse for 15 seconds. After 30 minutes, a second plaque sample was collected from the left maxillary molar tooth. Samples were mixed, diluted, plated on blood agar plates and incubated at 37°C for 24 hours. Colonies were counted and bacteria per ml calculated. Statistically significant ($p < 0.01$) reduction in CFU/ml values were observed for subjects using both CHX products and the essential oils rinse (CHX with alcohol = 73% reduction, CHX without alcohol = 71% reduction, and essential oils = 39% reduction). No decrease in values were observed for either fluoride product. Dental professionals may need to emphasize to patients for whom antimicrobial rinses are indicated that it is important to follow the product use instruction closely to more fully obtain benefit from their use.

ANTIMICROBIALS

EFFECT OF ZINC SALTS ON ORAL PATHOGENS AND ORAL MALODOR.

SCHEINBACH^{*1}, G-X. WEI², C. D. WU², K. AJI¹, R. D'AMELIA¹ (¹Nabisco Inc., East Hanover, NJ; ²Univ. of Illinois at Chicago, Chicago, IL).

Zinc salts have been reported to inhibit growth of oral pathogenic bacteria associated with dental caries and oral malodor. Moreover, zinc can reduce oral malodor by binding to oral volatile sulfur compounds (VSC). This study compares the *in vitro* effect of zinc gluconate (ZnG) and zinc lactate (ZnL) on growth and viability of oral pathogens including *Streptococcus mutans*, *Streptococcus salivarius*, *Streptococcus sanguis*, *Actinomyces viscosus*, *Porphyromonas gingivalis*, *Prevotella intermedia*, *Peptostreptococcus micros* and *Fusobacterium nucleatum*. It also tests a formulation Neutrazin™) of ZnG, medium chain triglyceride, and Tween 80, in a pressed mint, for its ability to reduce oral VSC in humans as measured by gas chromatography. For *in vitro* testing test bacteria were incubated with serially diluted test compounds (0.001-2.5 mg/ml) for 48 hr at 37°C and the minimal inhibitory concentration (MIC) and minimal bactericidal concentration (MBC) were determined. Subjects tested for VSC reduction performed no oral activity during the prior 12 hr. Baseline levels of H₂S and CH₃SH were taken and VSC levels were then followed for 2 hr. after a pressed mint with varying levels of ZnG was dissolved in the mouth. Results: MIC ranges for test bacteria were 156-1250 µg/ml for ZnG and 78-625 µg/ml for ZnL. Within limits of experimental error, MBC's = MIC's, and ZnG and ZnL were equally effective. Neutrazin™ with ZnG at ≥ 0.1% reduced VSC by as much as 75%. These results show that ZnG and ZnL are equivalent in their ability to inhibit/kill oral bacteria associated with caries and oral malodor. Breath savers™ pressed mints with Neutrazin™ are effective in reducing oral VSC below objectionable levels.

ANTIMICROBIALS

CONVENTIONAL PERIODONTAL MAINTENANCE COMPARED TO ROOT PLANING/SUBGINGIVAL MINOCYCLINE.

R.A. REINHARDT, T.A. MEINBERG, C.M. BARNES, D.G. DUNNING (University of Nebraska Medical Center, Lincoln, NE).

Alternative regimens using subgingival antimicrobials compared to conventional periodontal maintenance (PM) may lead to more efficient protocols. The purpose of this study was to evaluate changes in alveolar bone height and standard clinical measures of periodontitis during conventional PM compared to isolated root planing and multiple doses of subgingival minocycline. Two premolar/molar interproximal ≥ 5 mm pockets were treated in each of 48 moderate to advanced adult periodontitis patients with: 1) isolated root planing and 4 subgingival doses of minocycline microcapsules over a 6-month period (RP/M; n=24 patients); or 2) conventional 3-month periodontal maintenance (PM; n=24 patients). Clinical and radiographic measurements including probing depth (PD), clinical attachment level (CAL), and interproximal bone height (BH) were recorded at baseline and one-year for comparison using paired t-tests, analysis of variance, and correlation coefficients. Baseline clinical and radiographic data were similar between RP/M and PM patients. Probing depths showed greater mean improvement in RP/M (0.9 ± 0.1 vs 0.4 ± 0.1 mm, $P=0.02$), with 12.5% of RP/M sites gaining ≥ 2 mm compared to 2.1% in PM. The mean loss in bone height and percent sites losing bone height were less in RP/M (0.05 ± 0.05 mm; 6.3%) than PM (0.09 ± 0.08 mm; 13.0%), but differences were not significant. While cross-sectional CAL and BH, or PD and CAL were highly correlated, changes over one-year were not correlated among any of these parameters. Isolated root planing and subgingival minocycline added little additional time to the 3-month appointments, but resulted in more pocket depth reduction and less bone height loss than conventional periodontal maintenance. Supported by OraPharma, Inc., DSR-Electro Medical Systems and UNMC College of Dentistry.

CARIES

FACTORS AFFECTING THE EFFICACY OF AIR ABRASION.

C. AUSTIN, J.C. HAMILTON, T.L. AUSTIN (Univ. of Michigan, Ann Arbor, Michigan).

Use of air abrasion has been increasing among clinical practitioners without a good understanding of the factors which affect the efficacy of the cutting action of these devices. The purpose of this study was to examine the affect of the distance of the handpiece nozzle from the work surface (distance), the angle of inclination of the nozzle relative to that surface (angle) and the two basic types of abrasive flow, continuous or pulsed (pulse), on the speed with which the substrate was pierced (time). Data were collected using a Kreativ model Mach 5.0 Plus unit at a flow rate of 10g/minute under 80psi using 27µm abrasive powder through a .46mm nozzle. The need for a standardized substrate was satisfied through the use of standard 1.5mm-thick glass laboratory slides, to simulate the mean width of the enamel layer. The handpiece was placed in a rigid jig, in which the distance to the sample slides was varied from 1 to 3mm and the angle of incidence of the flow with the surface of the slides varied between 75 and 90 degrees. Data were collected over repeated trials (n=142) in which the flow was either continuous, or used the unit's "Power Pulse" setting. Analysis of the results using a straightforward linear model of the form [time = distance + angle + pulse + e] showed that increasing the distance of the nozzle from the surface reduced the cutting time, reducing the angle from 90 to 75 degrees also reduced the cutting time, as did the use of the unit's pulsed flow feature. All of these results were highly significant ($p > 0.002$ or better). These results give firm support to the use of pulsed flow over continuous as a means of improving the cutting efficiency of these devices and provide important information to clinical practitioners on the best techniques for their application. Supported by a Univ. of Michigan School of Dentistry SRP grant. caustin@umich.edu

CARIES

ALTERNATE MUCOSAL ROUTES FOR DENTAL CARIES VACCINE DELIVERY.

A. LAM, D. SMITH, L. BARNES, J.D.CLEMENTS, D.UJISE & M.A.TAUBMAN (The Forsyth Institute, Boston, MA; Tulane Univ., New Orleans, LA; Cambridge Scientific, Cambridge, MA).

Intranasally administered dental caries vaccines show significant promise for human application. Alternate mucosal routes may be required, however, to induce salivary IgA antibody in children with respiratory diseases. Since rectal mucosa contains inductive lymphoid tissue, we examined the rectal route for induction of salivary immunity using mutans streptococcal glucosyltransferase (GTF), which can induce protective immunity when administered by oral, topical and nasal routes. GTF was delivered in PLGA microparticles. Sprague-Dawley rats (6/group) were immunized on days 0,7,14 and 21 rectally (R) with GTF(R-G), R with GTF and cholera toxin (CT)(R-G/CT) or detoxified mutant *E. coli* toxin (dLT)(R-G/dLT), intranasally (IN) with GTF (IN-G), or sham-immunized rectally with PLGA + CT. Responses were then measured in salivas, intranasal washes, fecal extracts, and sera. Salivas and nasal washes of all IN-G immunized rats contained IgA antibody to GTF on day 28. Salivary IgA antibody was also detected in 7/12 rats rectally immunized with GTF + CT or dLT, although responses were usually lower than in the IN-G group. In contrast, little salivary (or nasal wash) IgA antibody to GTF could be detected in R-G rats immunized without adjuvant. Fecal extracts from a majority of R-G/CT and R-G/dLT rats contained IgA antibody to GTF, while R-G or IN-G rat groups contained lower frequencies of detection of fecal IgA antibody. Sera from all rats in IN-G, R-G/CT and R-G/dLT groups also contained IgG antibody to GTF. These results support the interconnectedness of the mucosal immune system and suggest that rectal immunization with either holotoxin or detoxified mucosal adjuvants can induce potentially protective IgA antibody to GTF in the oral cavity. Support: DE06153, DE12434, DE04733 & Harvard Medical School.

CARIES

ASSESSING SUPERSATURATED CALCIUM PHOSPHATE RINSE IN PREVENTING AND REMINERALIZING CARIES.

M. SINGH*, A. PAPAS, E. JOHANSEN. (Tufts University School of Dental Medicine, Boston. MA. USA).

The *objective* of the study is to assess the efficacy of a supersaturated Calcium and Phosphate rinse in remineralizing incipient caries and preventing or reducing the initiation of new caries in xerostomics. 126 xerostomics, mean age=56.43, males=38, females=88, Sjögren's (n=63), radiation therapy to head and neck (n=32), and medications (n=71) were included. Trained examiners followed the same surfaces for various period (Mean=61.83 months) on multiple occasion for increments and decrements. Non-compliance (NC) (n=36) and Compliance (C) (n=90) to the regimen were determined on self-administered questionnaire. T-test was done to compare the compliant, and non-compliant groups. Results showed, the surface increments /per month of 0.034 ± 0.08 and -0.027 ± 0.16 in root in NC and C ($p=.04$). In coronal surface, NC was 0.089 ± 0.13 and in C, -0.009 ± 0.17 ($p=.004$). The decayed surface 2.35 ± 3.74 found in the C group per hundred surfaces at the baseline decreased to 0.91 ± 2.08 at the final visit where as in the NC group, 1.39 ± 2.57 decayed surface increased to 2.09 ± 4.45 . Fluoride rinse alone cannot meet the demand for prevention and reversals (Papap et al 1999). To overcome the high cariogenic challenges in salivary hypofunction, supplementation with supersaturated calcium and phosphate along with fluoride showed decreased increments and increased number of reversals of decayed surfaces on the compliant patients than on non-compliant patients. (This study is funded in part by Inpharma, Norway.)

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BIOFILMS

TREATMENT WATER CONTAMINATION CONTROL USING MICROFILTRATION, REDOX POTENTIAL AND A NATURAL CITRUS BOTANICAL.

R. PUTTAIAH, J. CHANDLER, R. CEDERBERG AND R. SPEARS. Baylor College of Dentistry TAMUS HSC, Dallas, TX. Vistatran Research, Ashland, OH.

The purpose of this study was to evaluate a device that utilized microfiltration, redox potential (VistaClear™), and a liquid citrus botanical (VistaClean™) in controlling planktonic organisms in dental unit waterlines systems to provide safe dental treatment water. Materials and methods included an automated multi-group dental unit waterline simulation system built to scale and function replicating 2 biofilm free dental unit waterline systems was used in this study. Two VistaClear™ (Redox Alloy Metal ± 0.9 micron candle with bioavailable elemental silver) units were used in this study with source water from the municipal system. Both systems had a 500 mL reservoir (with an injection port) post the filtration and redox modules. Both units were free of biofilm at the commencement of the 6-week study. In one reservoir, 4 drops of VistaClean™ (natural polyphenols, bioflavonoids and ascorbic acid) was introduced daily. Waterlines from the simulation system were studied using scanning electron microscopy at the beginning and at the end of the study. Baseline and twice weekly, about 10 mL water was sampled and plated using R2A agar for Heterotrophic plate counts (HPC). Results at baseline indicated no biofilm in the lines, while being present at the end of the study. $\log_{10}$ of HPC were as follows—

	Tap	Pre-Filtration	Effluent with VistaClean™	Effluent without VistaClean™
Mean	2.21	3.14	1.0	2.16
SD	0.49	0.52	0.0	0.37

In this study, a combination of the VistaClear™ device and VistaClean™ botanical was found consistently provided microbiologically safe and acceptable dental treatment water. Additional periodic cleaning with safe and approved devices may be needed to prevent biofilm proliferation in the lines. Partial support from Diagnostic Science and Biomedical Sciences, BCD TAMUS HSC Dallas TX; Equipment support from Vistatran Research, Ashland OH and ADEC, Newburg OR.

BIOFILMS

DENTAL WATERLINE DECONTAMINATION WITH OZONATED WATER AS AN IRRIGANT.

R. PUTTAIAH, D. PHAM, P. NG, V. NGUYEN, R. CEDERBERG, ASC THOMAS AND R. SPEARS. Baylor College of Dentistry TAMUS HSC, Dallas, Texas.

The purpose of this study was to evaluate the efficacy of a water ozonation membrane technology in controlling microbial biofilms and planktonic contamination in the dental unit water system. Materials and methods included an automated multi-group dental unit waterline simulation system built to scale and function replicating 4 dental unit waterline systems was used in this study. The ozonation device and membrane ozone/water mixing chamber prototype developed by Compact Membrane System, DE used municipal water. Two groups (G2 and G3) had naturally grown biofilms in the lines and biofilm was cleaned in the remaining two groups (G1 and G4) at the onset of the study. The 4 treatment groups were purged daily and durations (G1&2 10 minutes and G3&4 for 20 minutes) with ozonated water in addition to simulated use as dental treatment water. At the end of each month, all groups were purged with <200 ppm of ClO_2 for a period of 2.5 minutes. The total study period was 12 weeks. Baseline and post study waterline samples studied using scanning electron microscopy (SEM). Water samples from all groups were plated weekly using R2A standard methods. Results of the SEM indicated biofilm control at the end of the study. Heterotrophic plate counts of water indicated at the beginning of the study, all groups with biofilm had $>400,000$ cfu/mL while the clean lines had <10 cfu/mL. Untreated municipal water varied from 10 to 1000 cfu/mL during the study. By the end of the 4th week, all groups with biofilm reduced in contamination to <500 cfu/mL. Lines without biofilm stayed below 100 cfu/mL. After cleaning with ClO_2 , the contamination levels remained low consistently <200 cfu/mL. The results in this study indicate that daily purging the lines with ozonated water and providing membrane mixed ozonated dental treatment water controlled the waterline biofilms and provided safe treatment water for dental care. Support by TAMRF Sub-Contract from Compact Membrane Systems DE, through an NIH-SBIR Phase-I Grant. Partial support from Diagnostic Science. BCD TAMUS HSC, and Equipment Support from ADEC Inc. Newburg OR.

ELDERS

ORAL HEALTH AMONG RESIDENTS OF CANADIAN LONG-TERM CARE FACILITIES.

C.C.L. WYATT, M.I. MacENTEE (University of British Columbia, Vancouver, CANADA).

There has been over the last quarter-century a growing concern about the neglect of oral health-care for residents in long-term care (LTC) facilities. Consequently, we conducted this study as a followup to previous oral health studies in Vancouver's LTC facilities to monitor the oral health of a recent cohort of residents. A dentist examined 369 residents in 39 facilities around Vancouver to record the prevalence of caries, the distribution of microbial plaque, and the numbers of cariogenic bacteria estimated from samples of saliva. In addition, each resident's medical history, oral hygiene practices, use of xerostomic-inducing medications, and ingestions of dietary sugars were recorded. The sample of residents consisted of 281 women with a mean age of 84 years, and 87 men with a mean age of 82 years. They all had serious disabilities, yet nearly everyone (87%) managed their own oral hygiene without assistance. They each had an average of 16.0 (SD 7.12, range 3-31) teeth, and 3.79 (SD 4.22, range 0-22) of the teeth were carious usually with root lesions. The mean plaque index (Silness & Loe, 1964) per subject was 1.3 (SD 0.87), although 76% of the sample had a score greater than 2, and 45% had a score equal to 3. The mean counts of *mutans streptococci* (9.7×10^5 CFU/ml saliva) and *lactobacilli* (1.6×10^5 CFU/ml saliva) were very high, as were the use of xerostomic-inducing drugs and daily ingestions of sugar (47% had a high sugar intake), all contributing to an elevated risk of caries. In summary, the oral health of this recent cohort of elders indicates that there has been no noticeable improvement in oral health in Vancouver's LTC facilities over the last twenty years. Supported by BCHRf Institutional Program Grant #212 (97-2).

ELDERS

SPECIFIC MEDICATIONS, HYPOSALIVATION, AND XEROSTOMIA AMONG A 79+-YEAR-OLD COHORT.

SD THOMPSON, CA WATKINS, CL MAREK, D WANG, HJ COWEN, JJ WARREN (U of Iowa, College of Dentistry, Iowa City, IA).

Clinical dry mouth is related to medication use and often measured as objective hyposalivation or subjective xerostomia. We investigated the relationship of specific medication exposure to both of these outcomes. The sample was the surviving cohort (N=450) of the Iowa 65+ Rural Health Study. Evaluations were conducted in subjects' homes by four calibrated dentist examiners. Whole saliva was collected using a validated suction technique. Xerogenic drugs included 14 subcategories. Xerostomia was defined as a "yes" response to "Does your mouth feel dry most of the time?" Subjects had a mean age 85.43 years (SD 4.1) and 69% were female. Prevalence of xerogenic drug exposure was 44% and prevalence of xerostomia was 17%. Mean unstimulated flow rate (UFR) was 0.348 g/min (SD 0.33). Thirty percent had hyposalivation (UFR $\leq$ 0.1 g/min). Those exposed to at least one xerogenic medication had lower mean UFR compared to those unexposed (0.276 vs. 0.419 g/min, $p < 0.05$). Pharmacologically similar medications were grouped and analyses were limited to medications or groups used by at least 5% of the population. Bivariate analyses related outcomes to medications within each significant xerogenic subcategory. Subjects with increased odds of hyposalivation were exposed to the following: loop diuretics (OR = 1.7, $p = 0.04$); digoxin (OR = 1.9, $p = 0.02$). Subjects with increased odds of xerostomia were exposed to the following: loop diuretics (OR = 2.5, $p = 0.0027$); oxybutynin (OR = 9.6, $p = 0.0002$); and tricyclic antidepressants (OR = 3.0, $p = 0.0164$). Xerostomia was reported by all subjects taking hydrochlorothiazide (N=83) and opiate agonists (N=27). Certain xerogenic medications were related to both objective hyposalivation and subjective xerostomia while others only were related to one outcome. Pharmacodynamic differences in these medications may indicate that hyposalivation and xerostomia are markers for distinct biological aspects of dry mouth. NIH P50 DE10758 and T35 DE07159

CANCER

DOES ADULT PERIODONTAL DISEASE HAVE ORIGINS IN-UTERO?

G.D. SLADE, S. OFFENBACHER, J.D. BECK, G. HEISS, H.A. TYROLER (Center for Oral and Systemic Diseases, UNC, Chapel Hill, NC, USA).

Observational and experimental studies suggest that impaired fetal growth elevates risk for chronic diseases in later life due to dysfunction, during adulthood, of tissues, including liver, that did not develop optimally *in utero* (Barker DJ. *Arch Disease in Childhood* 80(4):305-7, 1999). Because hepatic-mediators of inflammation have been implicated in periodontal disease (PD), we aimed to determine if impaired fetal growth, as measured by low birthweight, is associated with extent of adult PD. We used cross-sectional data from the Atherosclerosis Risk in Communities (ARIC) study of adults sampled from four U.S. communities. Clinical measurements of periodontal attachment level (AL) were made at six sites on all teeth and used to compute percentage of periodontal sites with 4+ mm AL (AL4Extent). Data were also collected on birth history, medical history, use of dental care and education of subjects and their parents. Data were analyzed from 6,280 people aged 52-74 years who were from full term, singleton births. 3.1% of subjects reported low birthweight (< 2500 g) and they had higher AL4Extent (mean $\pm$ se = 13.6 ± 1.7) than subjects with normal- or high birthweight (AL4Extent = 8.8 ± 0.2 , $P < 0.01$). Using Poisson regression analysis, the crude AL4Extent ratio for low birthweight was 1.5 (95% CI = 1.3-1.8), and remained virtually identical (AL4Extent ratio = 1.7, 95% CI = 1.4-2.0) in a multivariate model controlling for other correlates of PD: study site, age, sex, race, cigarette smoking, diabetes, body mass index, pattern of dental visits, period since last dental visit, and education. In this adult population, reported low birthweight was independently associated with extent of periodontal attachment loss after controlling for known risk factors for periodontal disease. Supported by NIDR DE-11551 and ARIC contracts supported by NHLBI.

CANCER

TOXICITY TO SALIVARY GLANDS AND XEROSTOMIA IN ORAL CANCER PATIENTS UNDERGOING PAROTID-SPARING RADIOTHERAPY.

JA SHIP, JG MALOUF, A EISBRUCH. (NYU College of Dentistry, New York, NY; University of Michigan School of Dentistry and Dept of Radiation Oncology, Ann Arbor, MI).

Many patients with head and neck cancer receive therapeutic dosages of radiotherapy (RT) that cause permanent salivary dysfunction and long-term xerostomia. We have developed new conformational dose-delivery techniques that minimize RT to contralateral parotid glands while providing therapeutic dosages to tumors. This study's purpose was to determine if parotid-sparing RT causes persistent diminished salivary toxicity with concomitant enhanced xerostomia-related quality of life. Pts receiving unilateral neck (n=17) and bilateral neck (n=25) parotid-sparing RT were followed from the initiation of RT to 2 years post-RT. Unstimulated (UPFR) and stimulated (SPFR) parotid flow rates were collected from both parotid glands (spared and treated), and responses collected to a standardized xerostomia-related quality of life questionnaire (XQOLQ). Salivary toxicity was determined using EORTC criteria (Grade 4 toxicity = $< 25\%$ of baseline UPFR and SPFR values). The results demonstrated that the prevalence of patients with Grade 4 toxicity decreased from completion of RT to two years post-RT. Approx 40% of unilateral and 70% of bilateral patients had Grade 4 toxicity at completion of RT, which decreased significantly at 2 yrs post-RT (unilateral: 17% for UPFR, 0% for SPFR; bilateral: 32% for UPFR, 8% for SPFR). XQOLQ responses worsened 2 to 3 fold by the completion of RT, then improved and became statistically indistinguishable from baseline values at 2 yrs post-RT completion. These results demonstrate that over time, parotid-sparing RT techniques result in decreased salivary toxicity and fewer xerostomia-related quality of life problems.

LOW BIRTH WEIGHT

PERIODONTAL THERAPY REDUCES THE RISK OF PRETERM LOW BIRTH WEIGHT.

N. J. LOPEZ, P. SMITH, J. GUTIERREZ, (Univ. of Chile, Santiago, Chile).

A longitudinal interventional study was used to determine if: 1) marginal periodontitis (MP) is a risk factor for preterm low birth weight (PLBW); and 2) if periodontal therapy (PT) reduces the risk of PLBW. 351 pregnant women aged 18-35 years, with MP, were selected before their 24th gestational week. A thorough periodontal examination in 6 sites of each tooth was done. The diagnostic criteria for MP was: ≥ 1 sites with probing depth ≥ 4 mm and attachment loss ≥ 3 mm affecting ≥ 4 teeth. Women were randomly assigned either to a group that received PT before the 28th gestational week ($n = 163$), or to a group treated after delivery ($n = 188$). Information about known risk factors associated with PLBW were obtained from the subjects' medical files. In addition to the periodontal variables, other factors showing statistical significance between groups were: age (28 vs 27, $p = 0.004$), N° of control visits (9.4 vs 7.9, $p = 0.0001$), and mean weight of infants (3,501 vs 3,344, $p = 0.0047$). There were no significant differences between groups in nutritional status, tobacco use, genitourinary infections, primiparous status, parity, history of PLBW or abortion. The total incidence of PLBW was 6.26%: 1.84% in women with treated MP and 10.11% in untreated women (non paired t-test, $p = 0.0019$). Relative risk: 5.49 (95% CI 1.65-18.22). Women with PLBW had significantly more severe MP than women with normal births ($p < 0.05$). Multivariate logistic regression analysis showed significant independent association between PLBW and the following factors: MP (OR: 4.70, 95% CI 1.66-1.82; $p = 0.018$); previous PLBW (OR: 3.98; 95% CI 1.11-14.21; $p = 0.003$), low number of control visits (< 6) (OR: 3.70; 95% CI 1.46-9.38; $p = 0.005$) and maternal low weight gain (OR: 3.42, 95% CI 1.16-10.03; $p = 0.025$). MP is an independent risk factor for PLBW, and PT significantly reduces the risk of PLBW. FONDECYT grant 1981094.

LOW BIRTH WEIGHT

IN UTERO EXPOSURE TO PERIODONTAL PATHOGENS IN PRE-TERM INFANTS.

WM SUTTLE, T SHIMER, P MADIANOS, K DORMAN, S WELLS, S OFFENBACHER. (Univ. of North Carolina, Chapel Hill, North Carolina).

Previous studies have suggested a relationship between maternal periodontal infection and spontaneous preterm birth (SPB). The UNC Cord Blood Study was undertaken to further examine the potential role of host oral pathogens in influencing pregnancy outcomes. It is hypothesized that maternal periodontal organisms become blood borne and target the fetal-placental unit to induce SPB. This case-control study examined fetal cord blood samples and maternal serum samples taken at time of delivery from 28 SPB (< 37 weeks gestational age) and 26 full term (FT) infants (≥ 37 weeks). Within 48 hours post-partum, a full mouth periodontal examination with plaque samples was conducted on all mothers. Fetal IgM was separated from maternal IgG using molecular exclusion chromatography, then IgM against 15 known periodontal pathogens was assessed by checker-board immunoblotting. Preliminary data from this study show that fetal IgM directed against specific periodontal pathogens could be detected more often in SPB infants. Individual putative pathogens (*P. gingivalis*, *B. forsythus*, *P. intermedia*, *A. actinomycetemcomitans*, *C. rectus*) produced non-significant odds ratios in the range of 1.87 - 3.24 indicating a trend with *T. denticola* producing the only significant odds ratio of 3.33 (95% CI 1.059-10.493). These preliminary findings indicate direct evidence of fetal exposure to periodontal pathogens and that those who are exposed may be more likely to be delivered prematurely. This study is currently ongoing with increasing subject enrollment. Future analysis will also include maternal antibody response to periodontal pathogens, maternal and fetal inflammatory mediator response, and maternal plaque analysis. mark_suttle@dentistry.unc.edu

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TECHNOLOGY

ORAL HEALTH CONSIDERATIONS FOR THE TECHNOLOGY DEPENDENT CHILD.

T.B. HENSON*, N.A. LENSER, E.M. MENENDEZ (University of Texas Health Science Center at San Antonio, San Antonio, TX; Nova Southeastern University, Ft. Lauderdale, FL).

Advances in medicine over the last two decades have allowed children who are medically technology dependent with severe disabilities to live longer lives. To date, little research has been done to assess the dental care needs of this population. The majority of research has pertained to the mortality rate of tube-fed individuals who have special needs (Strauss et al, 1977). Another study found significantly more rapid calculus formation in tube-fed subjects when compared to similar subjects who were not tube-fed (Dicks, 1991). The purpose of this study was to assess the oral health status of tube-fed children with special needs and compare the findings with similar special needs children who are not tube-fed. The study group consisted of 60 children ranging in age from 2 years to 18 years. The subjects were divided evenly between the two test groups: tube-fed ($N = 30$) and non tube-fed ($N = 30$). Basic history information was obtained by written questionnaire, followed by an intraoral examination gleaning the periodontal indices of six selected teeth (Ramfjord, 1959; Jamion, 1960). The results revealed appreciably more calculus formation and concomitant periodontal inflammation in the tube-fed children, with the degree of inflammation increasing with chronological age. These preliminary results strongly suggest a direct correlation between tube feeding and calculus formation and resulting periodontal inflammation. The absence of feeding-related oral activity allowed calculus to accumulate in heavier bulk than was seen in non tube-fed children.

TECHNOLOGY

EFFECT OF LIGHT APPLICATION ON AN IN-OFFICE BLEACHING GEL.

Y. LI*, S. CARTWRIGHT, M. LEZAMA, W. ZHANG and R. FELLER (Loma Linda University, Loma Linda, California).

In-office bleaching gels are used with or without the application of light; however, limited information is available regarding the efficacy and safety of the light application. The purpose of this study was to compare the bleaching efficacy of an in-office gel (Virtuoso Lightning, Den-Mat) with or without light application in 20 subjects. Paint-On Dam was applied to the labial gingiva; the gel was placed over the labial surface of the six maxillary or mandibular anterior teeth; and the Den-Mat Virtuoso Xenon Power Arc light was applied randomly to one side of the mouth. For the half of each arch receiving light treatment, each of the 3 teeth was treated with the light for 5 seconds, and the cycle repeated for 10 minutes. Tooth shade was determined by two investigators without knowledge of treatment using Bioform Color Ordered Shade Guide (Dentsply, York, PA). Tooth sensitivity and oral tissues also were evaluated. The results showed significant shade reductions ($p < 0.001$) regardless of light treatment for both maxillary and mandibular teeth. The average numerical shade reduction for maxillary teeth without light treatment was 6.13, while for those treated with light it was 8.80; the difference was significant ($p = 0.017$). The effect of light treatment was more evident for mandibular teeth: the shade reductions were 11.12 and 6.97 for teeth with and without light treatment, respectively. The difference was highly significant ($p = 0.002$), and in about a third of subjects it was clinically perceptible. Transient post-bleaching tooth sensitivity and gingival irritation were reported by about half of the subjects. It is concluded that light application significantly enhances the efficacy of the bleaching gel; there were no significant clinical adverse effects; and the enhanced bleaching efficacy is more evident for mandibular anterior teeth. Supported by Den-Mat Co. yli@sd.llu.edu

TECHNOLOGY

DENTIST-SPECIFIC PATTERNS OF FORCES ARE USED IN CLINICAL PROCEDURES.

J.L. WAGNER*, C.M. STANFORD, G.W. THOMAS (University of Iowa College of Dentistry and College of Engineering, Iowa City, Iowa 52242).

The pattern of forces applied by clinicians during routine procedures can influence diagnostic decisions. **Purpose:** To use a force-detecting sleeve positioned over the machined handle of routine dental instruments. The sleeve housed 4 strain gauges (EA-06-125BZ-350) oriented at right angles to detect forces in a vertical and lateral direction relative to the long axis of the instrument. Custom analog circuitry was designed to amplify and condition the output signal. Data recordings (50Hz) with a force vs. time signal were displayed using a Data Translations 204 In/Out board and HP VEE software. **Methods:** Three fully dentate caries-free subjects (ave. age 23yrs old) were recruited and IRB informed consent obtained. Five experienced right-handed dentists (6-40yrs practice) performed full mouth routine caries and periodontal exams using the force detecting probe. All data collection was performed in a double-blinded fashion with each dentist being given a standardized profile of activities to perform and all comments audibly recorded. **Results:** Vertical and horizontal force profiles were created for each tooth explored (n = 84). Three consistent but distinct patterns of probing were detected on each tooth between the five operators (triangular, square wave and irregular). Maximum vertical force varied (138-731g) between subjects ($p < 0.001$) but one operator had significantly greater ($P < 0.001$) forces used for both caries and periodontal probing on all subjects. Within the five operators, there were three specific characteristic styles of frequency, peak maximums, rate of loading and smoothness factor. **Conclusions:** This study demonstrated that the pattern of forces used in clinical exams can be described by a combination of peak magnitude and direction of the forces at the tip of the instrument. There were three distinctive patterns of probing that were associated with distinctive operator characteristics. P30-DE10126-09

WHITENING

EFFECT OF VITAL BLEACHING ON DENTIN BOND STRENGTH OF COMPOSITE.

J. SOUYIAS*, 1 689 A.L. NEME, W.C. WAGNER, P. YAMAN and F.E. PINK (University of Detroit Mercy, Detroit, MI and University of Michigan, Ann Arbor, MI).

Vital tooth bleaching is widely utilized. Although studies have investigated the effect of bleaching on enamel bond strength to resin composite, little information is available on the effect of bleaching on dentin bond strengths. The purpose of this *in vitro* investigation was to evaluate the effect of 10% (Opalescence) and 35% (Opalescence Quick) carbamide peroxide treatment on the dentin bond strength of resin composite. Extracted third molars were divided into 3 groups (n = 10) and each group was subjected to either 10 or 35% carbamide peroxide, or distilled water for 14 eight-hour periods at 37°C. Twenty-four hours following treatment, occlusal surfaces were ground flat and samples were mounted in acrylic with apices down. Exposed dentinal surfaces were etched, rinsed, and a 4-mm diameter cylinder of a hybrid composite (Prodigy) was bonded with a single bottle dentin bonding agent (Optibond Solo Plus) per manufacturer's suggestion. Following storage for 24 hours in 100% humidity, samples were subjected to a shearing force on an Instron Universal Machine at a crosshead speed of 0.5 mm/min. The data were analyzed by ANOVA and Tukey HSD ($\alpha = 0.05$). Although treatment with either 10% (8.74 ± 2.94 MPa) or 35% (8.15 ± 2.08 MPa) carbamide peroxide yielded lower shear bond strength values than the control (11.77 ± 5.85 MPa), the differences were not statistically significant. In conclusion, *in vitro* results indicate bond strength of resin composite to dentin is not significantly affected with either 10% or 35% carbamide peroxide treatments. UDMSD Student Project Grant.

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WHITENING

CLINICAL EVALUATION OF A NOVEL "TRAYLESS" TOOTH WHITENING SYSTEM.

E.J. SWIFT, Jr.*, H.O. HEYMANN, A.V. RITTER, B.T. ROSA, and A.D. WILDER, Jr. (University of North Carolina, Chapel Hill, N.C.).

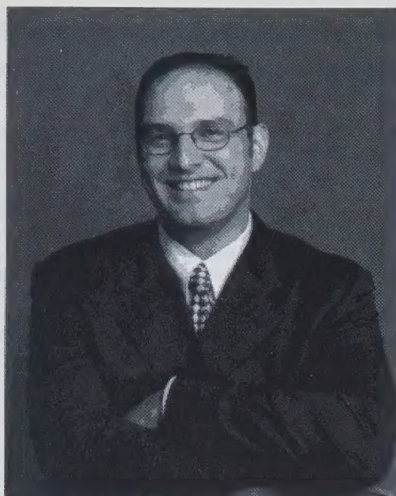
At-home tooth bleaching, which was formally introduced in 1989 by Haywood and Heymann, involves fabrication and use of a custom-fitted soft plastic tray for delivery of carbamide peroxide or hydrogen peroxide gel. Numerous laboratory and clinical studies indicate that at-home whitening is a safe and effective procedure. Recently, a new delivery system was developed; it contains a measured dose of 5.3% hydrogen peroxide on a polyethylene strip. The purpose of this study was to compare the safety and efficacy of the new system (CWS) to two established bleaching systems, containing: either 10% or 20% carbamide peroxide (OP-10, OP-20, respectively). Thirty-five adult patients with teeth darker than A3 on a value-oriented Vita shade guide were enrolled in the study, and were randomly assigned for treatment with one of the three bleaching agents. CWS subjects applied the agent for 30 minutes twice a day. OP-10 and OP-20 subjects applied the bleaching gel in a custom tray for approximately 8 hours overnight. Treatments continued for 14 days, or until the tooth shade was B1, the lightest Vita shade. Efficacy was measured by Vita shade (trained examiners under color-corrected lighting) at days 3, 7, 10, and 14 of treatment, and at one week post-treatment. Safety was evaluated using an oral soft tissue examination at the same intervals. Data were subjected to analysis of covariance. Use of either CWS or OP-10 resulted in mean lightening of 7 Vita shade guide units, while OP-20 use resulted in a 9-shade improvement. Differences were statistically significant ($p < 0.05$). The most common adverse events were tooth hypersensitivity and gingival irritation, but both were generally mild and transient. The results of this study suggest that, as measured by Vita shade changes, CWS provides a lightening effect similar to that of 10% carbamide peroxide over a 14-day treatment period. Supported by Procter & Gamble. ed swift@dentistry.unc.edu

SCALING

DENTINAL HYPERSENSITIVITY FOLLOWING SCALING AND ROOT PLANING (SRP) AND DENTAL PROPHYLAXIS.

M.S. WOLFF*¹, H. Kaufman² and I. Kleinberg². (¹Depts. of General Dentistry & ²Oral Biology & Pathology, State Univ. of New York, Stony Brook, NY).

Patients often complain of increased dental hypersensitivity (DH) after SRP and dental prophylaxis. This study evaluated the effects of a routine and an experimental prophylaxis on this problem in 41 adults with pre-existing dentinal hypersensitive and non-sensitive teeth. All subjects were examined by three methods: scratch, a 1 sec cold air blast, and a 3 sec ice water exposure. A total of 425 cusps and premolars were assessed and 68.3% were found sensitive by one or more of these methods. Subjects then underwent SRP using hand scalars and an ultrasonic scaler. Subjects were then reexamined to determine their post-SRP sensitivity. Thereafter, subjects were assigned to either of two groups and a dental prophylaxis was done with a non-fluoride containing pumice control (Preppies™, Whip Mix., Louisville, KY) or an experimental paste containing 10% (w/w) calcium/arginine/bicarbonate/carbonate complex (SensiStat™, Ortek Therapeutics, Garden City, N.Y.). Subjects were re-examined for sensitivity as before. Both groups showed sensitivity reduction (magnitude as well as number of teeth) after SRP by all three methods but only the experimental prophylaxis group exhibited a large decrease after prophylaxis and this was seen also with each of the measurement methods. The control showed almost no decrease. Failure of routine prophylaxes to reduce post-prophylaxis sensitivity suggests this may be a crucial step in the management of sensitivity associated with SRP/prophylaxis procedures. The experimental prophylaxis was presumably effective because of its ability to seal rather than fill open dentinal tubules. (Supported by Ortek Therapeutics, Inc.).



Dr. Herbert Veisman



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SCALING

ULTRASONIC VERSUS CO₂ LASER FOR SCALING AND ROOT PLANING. IN VITRO ELEMENTAL ANALYSIS AND SEM STUDY.

SHALIK S.S. (Tanta University, Egypt).

The aim of this study was to compare between ultrasonic scaler and CO₂ laser for scaling and root planing as evidenced by root surface elemental analysis and scanning electron microscopic (SEM) study. Seventy hopeless periodontally involved human extracted teeth with a band of subgingival calculus were used. Ten teeth were considered as control and sixty teeth were divided into two groups. Each group was further subdivided into three subgroups subjected to low, medium and high power intensity of ultrasonic scaling for the first group and 2w, 4w, and 6w CO₂ laser for the second group. After treatment specimens were prepared for examination by SEM and X-ray analyzer to determine the morphologic changes and the percentages of the inorganic contents in root surfaces after scaling and root planing by either procedure. Elemental analysis presented a decrease of calcium and magnesium contents of specimens exposed to ultrasonic scaling and CO₂ laser which is related to the removal of calculus and parts of cementum. Fluoride element did not significantly affected by either technique. Phosphorous (P), Zinc (Zn) and Aluminum (Al) did not significantly affected after ultrasonic scaling while after CO₂ laser there was a significant increase of P and Al and a decrease in Zn contents. SEM observations showed that ultrasonic scaling with low power intensity left considerable remaining parts of calculus deposits, at medium power root surfaces appeared with some remnants of calculus, at high power intensity root surfaces appeared smooth but with striations caused by the metallic tip. After CO₂ laser scaling there was cracking and fragmentation of calculus in first and second subgroup with melting of calculus in the third subgroup. The adjacent cementum showed wide holes and depressions exposing the underlying structures. It was concluded that ultrasonic scaling is less destructive to root surfaces in comparison to CO₂ laser but both techniques are not sufficient for complete scaling and root planing. shafik_eg@yahoo.com

DIABETES

EFFECT OF PERIODONTAL TREATMENT ON DIABETES GLYCEMIC CONTROL.

S.G. GROSSI*, P. SKREPCINSKI, J.J. ZAMBON, H. REYNOLDS, A. HO, R.J. GENCO (Dept. of Oral Biology, SUNY at Buffalo, NY and US Public Health Service, Phoenix, AZ).

Infection from periodontal origin has been shown to complicate diabetes mellitus and increase the occurrence of microvascular and macrovascular diabetes complications. Thus, control of periodontal infection and inflammation is becoming increasingly important in the management of diabetic patients suffering from periodontal disease. A treatment regime including ultrasonic debridement under continuous irrigation with 0.12% Chlorhexidine and systemic doxycycline (100 mg/tid) was tested in Pueblo Indians suffering from type 2 diabetes and severe periodontal disease. Significant clinical outcomes were obtained as reduction in Pocket Depth (PD) and gain in Clinical Attachment Level (CAL) ($P < 0.001$) in sites initially deep (PD ≥ 5 mm) at 3 and 6 months following this antiinfective therapy. Mean reductions in PD and gain in CAL were 1.1 and 1.3 mm and 0.9 and 0.7 mm at 3 and 6 months, respectively. Elimination of subgingival *P. gingivalis* and *B. forsythus* was obtained in 90% of the patients treated. Systemic outcomes of this antiinfective therapy were seen as well, measured as reductions in level of glycated hemoglobin (HbA1c) in patients whose initial HbA1c was elevated ($> 9\%$). The corresponding reductions in HbA1c at 2, 3 and 6 months were 0.8, 1.3 and 0.7%, respectively, paralleling results obtained previously in Pima Indians with a similar treatment regime. These results further support that effective elimination of periodontal infection and reduction of the associated inflammation results in improvement of control of diabetes mellitus measured by levels of glycated hemoglobin. We conclude that Gram-negative infection of periodontal origin constitutes a significant chronic bacterial challenge complicating glycemic control of diabetes mellitus. Therefore, treatment of periodontal infection is an extremely important component in the management of patients with diabetes mellitus and its complications. Supported by USPHS Grant No. DE04898, and 282980004 from the Department of Health and Human Services.

DIABETES

COMPARATIVE EVALUATION OF AN ADJUNCTIVE ORAL IRRIGATION IN DIABETICS

S AL MUBARAK*, SG CIANCIO, A ALJADA, H AWA, W HAMOUDA, H GHANIM, J ZAMBON, P DANDONA, T BOARDMAN, C ROSS (SUNYAB, Buffalo, NY USA).

This 12 week study assessed the response of diabetics to periodontal treatment and powered oral irrigation therapy. 52 diabetics (Type 1 & 2) with periodontal disease were randomized into 2 groups. Treatment included ultrasonic scaling and root planing combined with regular oral hygiene in the control group. The test group received the same therapy plus oral water irrigation twice a day. Assessments made prior to and at 6 and 12 weeks after treatment included measurement of modified gingival index (MGI), probing pocket depths (PPD), plaque index (PI), clinical attachment level (CAL) and bleeding on probing (BOP). Laboratory analyses measured Reactive Oxygen Species (ROS), cytokines, glycated hemoglobin (HbA1c), and subgingival analysis to *A. actinomycetemcomitans*, *P. intermedia*, *P. gingivalis*, and *B. forsythus*. After treatment, both groups showed clinical, molecular, and microbial improvement. At 12 weeks there was a statistically significant reduction in MGI, PI, and BOP ($p < 0.03$) and ROS ($p < 0.012$) for the test group compared to controls. Unlike the controls, molecular analysis showed a significant improvement for IL-1 at 6 weeks and PGE-2 at 6 and 12 weeks ($p < 0.04$). Treatment of moderate to advanced periodontal disease in diabetic patients improves periodontal, metabolic and molecular parameters, and adjunctive use of water irrigation further inhibits the inflammatory, systemic and periodontal conditions. Supported in part by a grant from Waterpik Technologies.

MATERIALS

NEW AND NOVEL DENTURE-BASE POLYMERS RESISTANT TO MICROBIAL INFECTION.

P. ANTONY RAJ* and G. VENKATARAMAN (Division of Periodontics, School of Dentistry, Marquette University, Milwaukee, WI, and Matrix Engineering Inc., Medford, MA, USA).

Denture-induced stomatitis is a common oral disease caused by the adhesion of *Candida albicans* to denture surface. This is primarily due to the absence of charge on poly (methyl methacrylate) [PMMA] used for making denture. Natural antibiotics in saliva are not selectively adsorbed onto the denture surface to inhibit *C. albicans* adhesion. In this study, we synthesized several negatively charged PMMAs using mixtures of methyl methacrylate and methyl acrylic acid as monomers by using bead suspension polymerization technique. The polymers were examined for their efficacy to adsorb C16 and BN16, the antifungal peptides of histatin 5 and batenecin 5, respectively. The extent of adherence of *C. albicans* onto the surface of these polymers was examined in oral physiological environment. The candidacidal activity of the adsorbed peptides was determined by using fluorescence spectroscopy. Our results suggest that 1) the extent of adsorption of antibiotic peptides, and inhibition of *C. albicans* adhesion is directly proportional to the negative charge on the polymer, 2) the candidacidal activity observed for antibiotic adsorbed polymer correlates with the extent of negative charge, and 3) the polymers could be used as denture-base resins to prevent microbial infection. Supported by USPHS Grant DE12285-OIAI. periamthya@marquette.edu

MATERIALS

EFFECT OF FLUORIDE AND CARBAMIDE PEROXIDE ON PORCELAIN SURFACES.

C.J. BUTLER*, C.F. DRISCOLL, J.A. VON FRAUNHOFER, G.A. THOMPSON, D.A. RUNYAN (University of MD and U.S. Army Dental Research Detachment, Great Lakes, IL).

This study evaluated the changes in surface roughness of a feldspathic (Ceramco II), a low-fusing (Finesse), and an aluminous (All-Ceram) porcelain following exposure to 1.23% acidulated phosphate fluoride (APF), 0.4% stannous fluoride, 10% carbamide peroxide, and distilled water. Forty discs were made of each porcelain for a total of 120 samples. Each disc was abraded with a medium grit diamond and autoglated. Thereafter, one side of each disc was abraded with the diamond and polished using a porcelain polishing kit to simulate a chairside adjustment and polishing. The discs were immersed in the F- solutions and water for 50 min and in carbamide peroxide for 48 h. The surface of each disc was evaluated using a surface profilometer (Mitutoyo Surftester SV-400) and an Ra value was determined for each specimen. The data were analyzed by a 2-way ANOVA and post-hoc Student t tests. Exposure of the porcelain surfaces to the test media caused changes in surface roughness but the effect varied with the test medium and the porcelain surface. Both the polished and glazed low fusing surfaces showed increased roughness in APF (Ra = 0.15 and 0.13, $p < .05$) and the glazed surface was affected by SnF₂ (Ra = 0.10, $p < .05$). The aluminous specimens were unaffected by the test media except for the glazed surface in APF (Ra = 0.07, $p < .05$). The glazed feldspathic porcelain surfaces were affected by all test media (Ra = 0.09, 0.05 & 0.03, $p < .05$) and the polished surface was significantly affected by the APF (Ra = 0.12, $p < .05$). The data indicate that both glazed and polished porcelain surfaces exposed to fluoride media may become rougher. This work was supported by the University of Maryland and the U.S. Army.

BACTERIOLOGY

SUBJECT-BASED OCCURRENCE OF ANTIBIOTIC-RESISTANT PERIODONTAL PATHOGENS.

T.E. RAMS* and D. FEIK (Temple University School of Dentistry, Philadelphia).

The subject-based occurrence of putative periodontal pathogens exhibiting *in vitro* resistance to therapeutic breakpoint levels of doxycycline (4 µg/ml), amoxicillin (8 µg/ml), metronidazole (16 µg/ml) or clindamycin (4 µg/ml) was determined on 200 severe adult periodontitis patients. A pooled paper point subgingival specimen from each study subject was transported in VMGA III, and plated onto anaerobically incubated enriched Brucella blood agar with and without antibiotic supplementation, onto anaerobically incubated Hammond's selective medium, and onto TSBV incubated in 5% CO₂. Evaluated pathogens were *A. actinomycetemcomitans*, *P. gingivalis*, *P. intermedia/nigrescens*, *Campylobacter* spp., *P. micros*, β-hemolytic streptococci, *Fusobacterium* spp., *E. faecalis*, and gram-negative enteric rods. Pathogen growth on antibiotic-supplemented plates indicated *in vitro* resistance to the antibiotic breakpoint value. 31 (15.5%) subjects did not reveal pathogens resistant *in vitro* to the test antibiotics. A total of 127 (63.5%), 93 (46.5%), 77 (38.5%), and 43 (21.5%) study subjects yielded ≥ 1 evaluated periodontal pathogens resistant *in vitro* to doxycycline, amoxicillin, metronidazole and clindamycin, respectively. The most frequent resistant pathogens were: doxycycline - *P. intermedia/nigrescens* and *P. micros*, amoxicillin - *P. intermedia/nigrescens*; metronidazole - β-hemolytic streptococci; clindamycin - *A. actinomycetemcomitans*. Adult periodontitis subjects frequently yielded strains of putative periodontal pathogens resistant *in vitro* to therapeutic concentrations of antibiotics commonly utilized in clinical practice. The wide subject variability seen in antibiotic resistance patterns of putative pathogens underscores the need for *in vitro* susceptibility testing of the subgingival microbiota to optimize periodontal antibiotic therapy.

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BACTERIOLOGY

FREQUENCY OF BACTEREMIA FOLLOWING DIFFERENT MODALITIES OF PERIODONTAL TREATMENT.

R. J. GENCO*, S.G. GROSSI, J.J. ZAMBON, H. REYNOLDS, A. HO, S. GARRETT (Dept. of Oral Biology, SUNY at Buffalo, NY and Atrix Laboratories).

Transient bacteremias of oral origin have been implicated as a possible causal pathway of periodontal infection affecting systemic health and complicating systemic conditions, mostly CVD and diabetes mellitus. The frequency of bacteremia following different modalities of periodontal treatment were examined in a randomized clinical trial. A total of 100 patients exhibiting severe periodontal disease were randomized to one of four treatment groups: Subgingival application of Atridox (ATX), Scaling and root planing (SC/RP), Oral Prophylaxis (prophy) and Scaling and root planing preceded by subgingival treatment with Atridox (ATX/SC-RP). Blood samples were collected by venipuncture from the antecubital vein at three time points; immediately prior to periodontal treatment, and within 30 sec. of the start and the finish of periodontal treatment. Blood samples were cultured anaerobically at 37°C for up to two weeks. Microbial identification of colonies was carried out on all positive blood cultures. Prior to scaling, 99 out of 100 patients' blood samples were negative for bacteria. During and shortly after scaling (30 sec.), bacteremias were detected in all 4 groups. Frequency varied among the different treatment groups as follows: 39% in the SC/RP group, 10.7% in the AIX alone group, 15.4% in the AIX/SC-RP and 12.5% in the oral prophylaxis group, respectively. In addition, SC/RP resulted in bacteremias predominated by gram-negative organisms. Pretreatment with subgingival ATX prior to SC/RP resulted in a 60% reduction in the frequency of bacteremia ($p = .05$) and a shift in bacteria recovered to mostly gram-positive. We conclude that SC/RP results in a frequency of bacteremias (39%) of mixed, mostly gram-negative bacterial species. Pretreatment with subgingival Atridox prior to SC/RP results in a 60% reduction in bacteremias, of mostly gram-positive oral organisms, in contrast to the mostly gram-negative oral organisms cultured from the SC/RP group. Supported by USPHS Grant No. DE04898 and Atrix Laboratories Inc.

PROFESSIONALISM

DEVELOPMENT OF A MEASURE OF CLINICIANS' ATTITUDES TOWARD SCIENCE TRANSFER.

RD. HULME*, J.D. RUGH, J.H. LITTLEFIELD, J.P. HATCH, A.C. LARME. (The University of Texas Health Science Center at San Antonio, San Antonio, Texas).

As dentistry moves towards an evidence-based model for clinical decision-making, there is a need to assess clinicians' attitudes toward research dissemination or science transfer. This report describes the development of such a scale. An eight-step attitude scale development protocol presented by DeVellis and Comrey (1988), and employed by McGaghie (1995), was used to create the Science Transfer Attitude Survey (STAttS). An initial pool of 83 items was generated by a team of nine experts. The 83 STAttS items were completed twice by a sample of 45 practicing dentists (32 Male, 13 Female; Median Age = 44; 38 General Dentists, and 7 Specialists) attending a continuing dental education course in south Texas. This initial 83-item list was reduced to 28 items based on factor analysis of the data from the 45 respondents. A subsequent factor analysis of the 28 items revealed that 23 of the items pertain to three subscales: (1) Attitudes About the Importance of Research Involvement, 7 items, alpha = .81; (2) Attitude About Communicating with Researchers, 7 items, alpha = .81; (3) Attitudes About Acquiring and Applying Knowledge, 9 items, alpha = .80. Test-retest reliabilities for each subscale and for the entire survey were .90, .85, .77, and .84 respectively. Respondent demographics did not have significant effects on either the overall score or on any of the individual subscales. STAttS is a reliable measure of clinicians' attitudes about science transfer that generates three subscales and can be completed within a matter of minutes. Supported by ADA Health Foundation, and NIH grant DE07160. hulme@uthscsa.edu

PROFESSIONALISM

BENEFITS OF ACADEMIC AND RESEARCH CAREERS.

Chairperson: AM Iacopino, Marquette University School of Dentistry. Speakers: DS Carlson (Baylor), C White (Kansas City), J Keller (Iowa).

The goal of this symposium is to present a positive view of academic/research careers in dentistry. Specifically, to highlight the enjoyable experiences related to being a faculty member at a dental school. Too often, dental students are poisoned and discouraged by "disenchanted faculty" during their educational experience. This symposium provides an opportunity to communicate to those students pondering an academic future that there are positive aspects to that type of career. The speakers have been chosen based on their meritorious involvement with students and young faculty as mentors and their strong commitment to the areas of training and recruitment of future academicians. Each of the speakers represents different backgrounds, career training pathways, and levels of rank (DDS, PhD, DDS/PhD, clinical faculty, research faculty, department chair, associate dean). They will speak from their hearts about their own careers/interests including what their typical workday is like, why they enjoy what they do, what unique activities are a part of what they do, what they perceive as benefits/advantages compared to other careers, and what they see as highlights and incentives in the future. There will be a 20-minute presentation and question session for each speaker followed by a 30-minute roundtable and interactive audience discussion. The main target audience is students, postdoctoral fellows, and young faculty. These types of interactions are meant to facilitate recruitment and retention of future academicians addressing the critical "pipeline" issues facing dental education and research. This symposium is designed to augment the AADR NSRG sponsored joint ADEA/AAHR symposium entitled "Enhancing Student Research and Training of Future Academicians: A Solutions-Based Approach" that has been scheduled from 1-4pm on the crossover day of March 7, 2001.

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SMOKING

CLINICAL EVALUATION OF A SMOKING DETERRENT MOUTHWASH.

KL KIRKWOOD, SG CIANCIO, ML MATHER. Center for Dental Studies, University at Buffalo, Buffalo, NY USA.

The aim of this 4 week study was to determine the effectiveness of a smoking deterrent mouthwash on taste alteration after smoking and its effects on oral tissues and malodor. The mouthwash causes the taste of a cigarette to become distasteful while the taste of food and drink is unaffected. 19 healthy subjects who had smoked ≥ 20 cigarettes for ≥ 5 years were enrolled. At baseline, subjects were evaluated for the clinical parameters (oral soft tissue exam, modified gingival index (MGI), plaque index (PI) and odor assessment) and randomly assigned to either test mouthwash or placebo. Clinical parameters were repeated at the 4 week visit. Diaries were provided to record smoking activity. Results showed that the MGI and PI (total and interproximal) were significantly reduced from baseline for both rinses ($p \leq 0.05$) but groups were not significantly different. When odor was assessed by use of dental floss at 4 weeks, both rinses caused a non-significant reduction from baseline values and were not significantly different from one another. When odor was assessed by tongue scraping, the test rinse caused a non-significant reduction from baseline values, whereas, the placebo rinse caused a non-significant increase from baseline values. There was no significant difference between groups. The majority of subjects in the test group noticed a foul taste upon smoking after using the rinse. Results show that the test rinse is safe to oral tissues and teeth, has some plaque, gingivitis and odor reducing properties and produces an unpleasant taste in the mouth only when smoking.

SMOKING

CIGARETTE SMOKING AND PERIODONTAL DISEASE. 11 MICROBIOLOGICAL PARAMETERS.

S.S. SOCRANSKY* and A.D. HAFFAJEE. The Forsyth Institute, Boston, MA.

The present investigation examined the prevalence, proportions and levels of subgingival species in adult subjects who were current, past or never smokers. 272 adult subjects ranging in age from 20 - 86 years with at least 20 teeth were recruited for study. Smoking history was obtained using a questionnaire. Subgingival plaque samples were taken from the mesial surface of all teeth excluding third molars in each subject at baseline and assayed individually for counts of 29 subgingival species using checkerboard DNA-DNA hybridization. Subjects were subset according to smoking history into never ($N = 124$), past ($N = 98$) and current smokers ($N = 50$). Uni-variate and multi-variate analyses were used to seek associations between smoking category and the counts, proportions and prevalence of subgingival species. Greater differences were observed for the prevalence (% of sites colonized) of the test species in the 3 smoking groups than were observed for counts or proportions of total counts. Members of the orange and red complexes including *E. nodatum*, *F. nucleatum ss vincentii*, *P. intermedia*, *P. micros*, *P. nigrescens*, *B. forsythus*, *P. gingivalis* and *T. denticola* were significantly more prevalent in current smokers than in the other 2 groups. The difference in prevalence between smokers and non-smokers was due to greater colonization at sites with pocket depth < 4 mm. Stepwise multiple linear regression analysis indicated that combinations of the prevalence of 5 microbial species and pack years accounted for 44% of the variance for mean pocket depth ($p < 0.000001$), while the prevalence of 3 microbial taxa along with age, pack years, current smoking and gender accounted for 31% of the variance in mean attachment level ($p < 0.000001$). The major difference between the subgingival microbiota in subjects with different smoking history was in the prevalence of species rather than counts or proportions. The greater extent of colonization in smokers appeared to be due to greater colonization at pocket depths < 4 mm. Supported by NIDCR grants DE 10977, DE 12108, DE 12861 and DE 12322.

HEPATITIS/HIV

UPDATE OF HEPATITIS C INFECTION AMONG DENTAL PROFESSIONALS.

S.E. GRUNINGER, C. SIEW, K.L. AZZOLIN, D.M. MEYER (ADA Health Foundation, Chicago, IL).

Hepatitis C virus (HCV) is a bloodborne pathogen that is transmitted similarly to the hepatitis B virus (HBV), a known occupationally acquired infection for dental professionals. In 1992, an ADA survey showed that practicing dentists had a 0.65% seroprevalence of HCV antibodies, a level similar to that found among the general population. This study tested for HCV antibodies by enzyme immunoassay (Abbott HCV EIA 2.0) in the serum of 776 U.S. dentists, 206 international dentists and 121 dental hygienists/assistants who volunteered to participate at the 1999 ADA Health Screening Program (HSP). Participants completed a self-administered questionnaire that revealed receipt of blood, tissues or organs prior to 1992. Eight U.S. dentists (1.03%), one international dentist (0.48%) and two (1.65%) hygienists/assistants were repeatedly seropositive for HCV antibodies. Though confirmatory testing was not performed by RIBA, two U.S. dentists were weakly seropositive in tests that RIBA often did not confirm as true positive. From the HCV strongly seropositive group, one U.S. dentist received a blood transfusion and/or blood products, organs or tissues before 1992. Thus, the seroprevalence of U.S. dentists through occupational exposure can be considered to range from 0.64% to 1.03%, similar to the 1992 prevalence. The prevalence of HCV among HSP dental professionals appears to be no greater than the general population (1.8%), and occupational transmission of HCV to dental professionals remains very low.

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NUTRITION

ATTITUDES TOWARD EATING DISORDERS AND EXPANDED DENTAL ROLES.

N.K. ANDERSON*, H.P. WEBER, D.B. GIDDON (Harvard University, Boston, MA).

Based on a pilot study of dental health professionals' (DHPs) knowledge and attitudes about eating disorders (EDs) such as anorexia and bulimia and other traditionally nondental activities, questionnaires were revised and mailed to 600 state dental society members and their hygienists in 3 counties. Because EDs predominantly affect females, all identifiable female (F) and randomly-selected male dentists (M) comprised the sample. In addition to demographic data and experience with EDs, responses to mostly Likert-format items (1 = strongly agree to 5 = strongly disagree) were used to assess attitudes toward treatment, diagnosis, and management of EDs and other nontraditional or expanded roles of DHPs such as recognition and referral of hypertension, skin cancer, and counseling about substance and domestic abuse and smoking cessation. The response rate for Fs of 50% was significantly greater than the 14% for Ms ($p < .01$). In general, DHPs were not aware of nondental aspects of EDs and they perceived that the public/patients would not accept an expanded role for counseling except for smoking cessation. Although the M's age ($\bar{X} = 51.9 \pm 12.9$) was significantly greater than F age ($\bar{X} = 42.8 \pm 11.5$) ($p < .01$), there were no overall gender differences in responses. There were, however, gender differences in the correlations between age and attitude. The older the M DHP, the less agreement that DHPs should be involved in counseling in nondental areas, and the less likely EDs substance or domestic abuse are discussed, noted or referred to other health professionals. Hygienists agree more than dentists that DHPs should have a greater role than present in the primary care of patients. Dentists are thus willing to treat and prevent the dental ravages of EDs, counsel patients about smoking cessation but are reluctant to become involved in more covert personal areas not related to dental treatment. Supported by Milton Fund, Harvard University.

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NUTRITION

QUANTIFICATION OF COMMON FOOD BEVERAGE EFFECTS ON ORAL WETNESS.

M. CODIPILLY* and I. KLEINBERG. Dept. Oral Biology and Pathology, State University of New York, Stony Brook, New York.

Oral dryness is triggered when residual saliva on the hard palate falls below 10 to 15 μm (Wolff and Kleinberg, *Arch Oral Biol* 43, 455, 1998). In this study, saliva films on the hard palate (where wetness is least) and on the tongue (where it is most) were measured in subjects who fasted for 12 h and avoided oral hygiene. This was done with Sialopaper™ strips and the Periotron 8000® system (OraFlow, Plainview, NY; see above reference). Each test beverage was ingested (two 25 ml sips) and swallowed. Thereafter, palate and tongue wetnesses were re-measured at times up to 1 hour. Beverages included: black regular and decaf coffee, soda (Pepsi®), orange juice, beer (Coors®), and distilled water. All were evaluated at 2°C and coffee and water at 55°C as well. Mean baseline palate and tongue thicknesses were 14.0 ± 0.7 SE and 57.3 ± 1.4 SE, respectively and palate was more sensitive to moisture change than tongue. At 55°C, wetness fell with coffee and water between 30 and 55%, and dryness perception rose. Regular coffee dryness lasted 1h, decaf 30 min and water 15 min. At 2°C, beer wetness surprisingly fell about 25%, coffee only slightly, but soda, orange juice and water actually increased palatal wetness by 75, 63 and 38%, respectively. The coffee decrease lasted 15 min but beer decrease was 1h. In contrast, the wetness rise lasted up to 45 min or more for soda and juice and 15 min for water. Several factors were identified for further exploration (i) temperature-cold may favor wetness over hot (ii) astringents such as coffee may inhibit (iii) acid drinks such as soda and juice may enhance by stimulating saliva flow. The results indicated that common beverages can affect oral wetness differently and that the possibilities can be assessed objectively and quantitatively by the approach identified here.

MICROBIAL CONTAMINATION

EFFECTS OF DIFFERENT STORAGE METHODS ON MICROBIAL CONTAMINATION OF TOOTHBRUSHES.

A. SVENSON*, R. SRIKANTHA and K. VARGAS (Univ. of Iowa, Iowa City, IA).

It has been shown that toothbrushes become contaminated after brushing and, if not properly handled and stored, can serve as a reservoir for the reintroduction of potential pathogens into the oral cavity. Therefore, it was the purpose of this study to investigate the effect of mode of storage on the microbial contamination of toothbrushes. For this pilot project, commercially available toothbrushes were used. For each experiment, the subject used one of four toothbrushes on either the upper right (ur), upper left (ul), lower right (lr) or lower left (ll) quadrant of the mouth. After brushing each quadrant for 30 seconds, brushes were either rinsed under tap water for 10 seconds or not rinsed at all and either: (a) processed immediately, (b) left overnight to air dry at room temperature without capping, (c) capped with a tight fitting travel cap and left overnight at room temperature or (d) capped with a loose fitting toothbrush cap and left overnight at room temperature. Toothbrushes were placed in 5mls of PBS and vigorously vortexed for 10 seconds. The resultant suspensions were serially diluted and plated onto four agar plates (blood agar, rogosa, sabouraud dextrose agar and mitis salivarius-nalidixic acid agar). Plates were incubated appropriately for 48 hrs and counted. Statistical analysis was done using ANOVA and Dunn's or Tukey's post-hoc tests. When toothbrushes were rinsed prior to storage, those that had been left uncapped to air dry overnight and those that had been loosely capped showed significantly less ($p < 0.05$) mutans streptococci than those brushes that had been processed immediately or tightly capped. No differences were noted in total flora, yeast or lactobacillus counts. When toothbrushes were not rinsed, those brushes that had been left to air dry or had been loosely capped had significantly less ($p < 0.05$) total flora and mutans streptococci. No differences were seen for yeast or lactobacillus numbers. These results suggest that mode of toothbrush storage affects bacterial load with the mutans streptococci being most affected.

FLUORIDE

PRIMARY TOOTH DENTAL FLUOROSIS AND FLUORIDE INTAKE DURING THE FIRST YEAR OF LIFE.

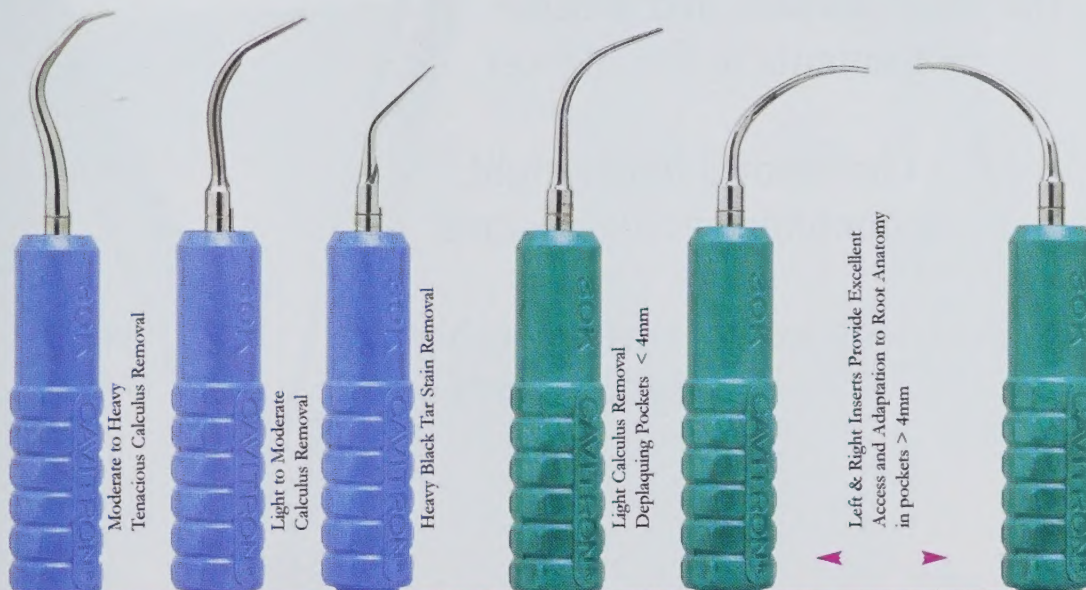
S.M. LEVY*, S.L. HILLIS, J.J. WARREN, B. BROFFITT, M. ISLAM, J.S. WEFEL, M.J. KANELIS. (University of Iowa College of Dentistry, Iowa City, IA, USA).

Few studies in North America have assessed dental fluorosis of the primary dentition and few, if any, anywhere have assessed fluoride intake during different time periods related to fluorosis development. The purpose of this presentation is to report on analyses relating estimated prenatal fluoride (F) intake and F intake during 5 time periods in the first year of life to primary tooth fluorosis. As part of The Iowa Fluoride Study, subjects were recruited at birth and studied longitudinally. Trained examiners assessed dental fluorosis for 698 children ages 4-7 using the Tooth Surface Index of Fluorosis (TSIF) adapted for the primary dentition. Fluorosis prevalence was 10.7%, primarily on the second primary molars. Detailed parent questionnaires at child-birth were used to estimate prenatal F intake. In combination with fluoride assay of individuals' home water sources, formulas, commercial juices, soft drinks, etc., questionnaires sent at 6 weeks and 3, 6, 9, and 12 months were used to estimate F intake during the first year of life (combined F intake from water, beverages and some foods, supplements, and dentifrice). Complete data, including prenatal, were available for 357 children. Receiver Operating Characteristic (ROC) curves and logistic regression were used to assess the importance of different time periods' F intake while controlling for demographic factors. The fluoride intake estimates at 6 and 9 months were the most important time periods and were about equal in their relationship with fluorosis ($p = .0007$ and $p = .0004$, respectively), but no other period was jointly statistically significant. Results suggest that fluoride intake during the middle of the first year of life is most important in fluorosis etiology for the primary dentition. (Supported in part by USPHS grants 2ROI-DE09551 and 2P30-DE10126.)

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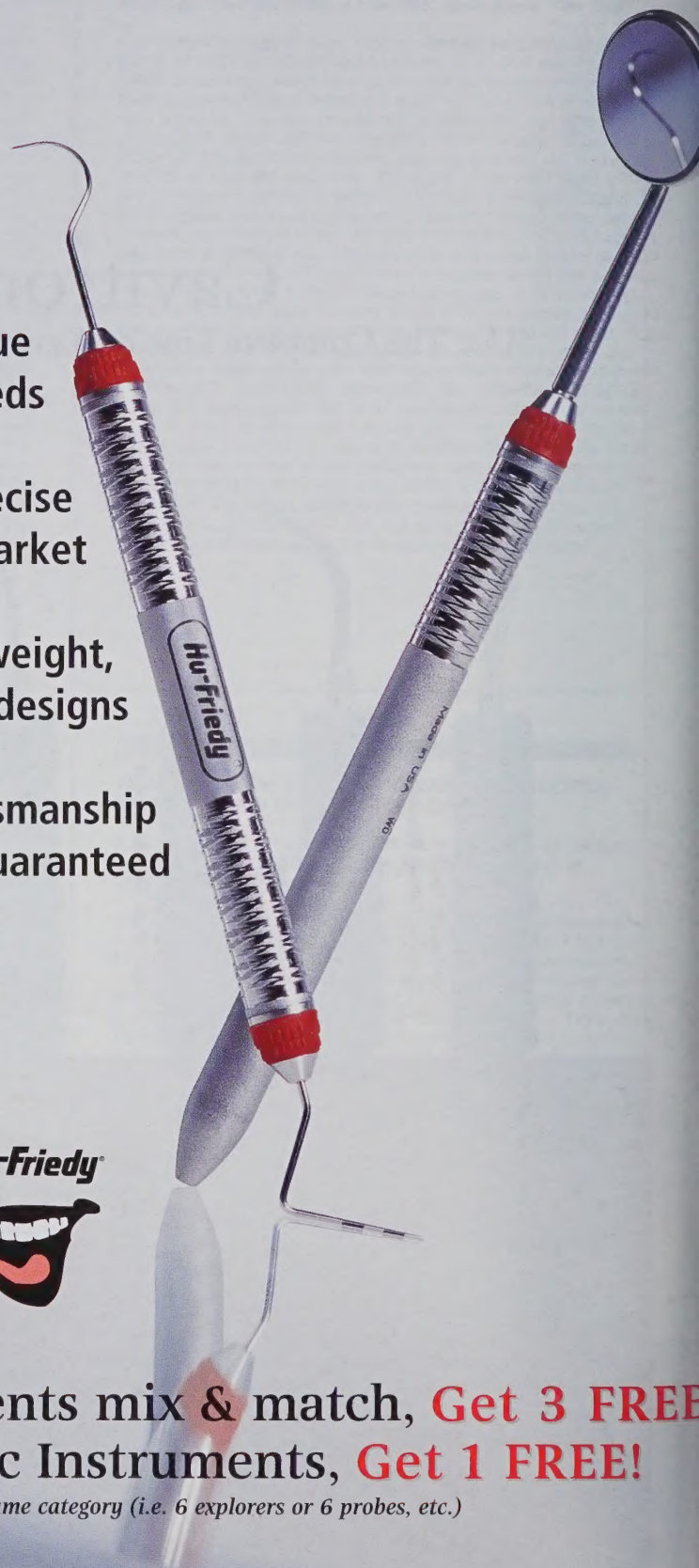
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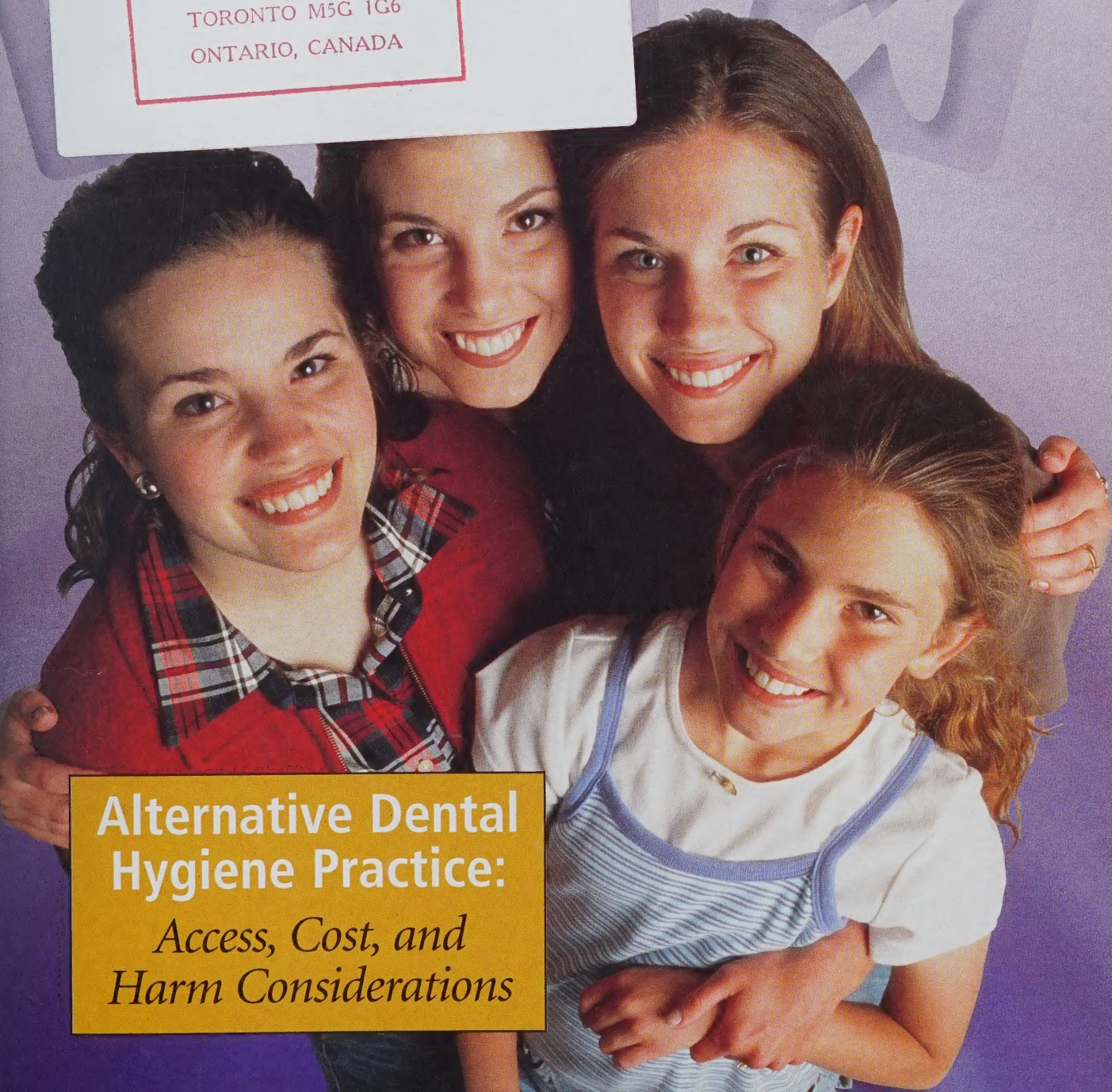
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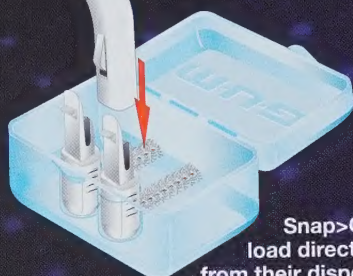


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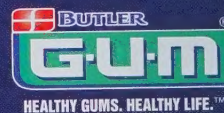
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"The Weakest Link"

by Salme Lavigne,
RDH, BA, MS(DH)



In 1974, dental hygienists in Quebec became self-regulating, forming l'Ordre des hygiénistes dentaires du Québec. Little did they know they were the pioneers of a national movement! There was, however, a fairly lengthy time span before the next move occurred—26 years to be exact. Ontario had been working very actively in the pursuit of self-governance for a number of years, but Alberta beat them to it in 1990. Approval was granted for self-regulation in Ontario in 1991 with proclamation of the act in 1993. British Columbia became self-regulating shortly after this, in 1995, and Saskatchewan followed suit in 1998. Although this means that over 92 per cent of dental hygienists in Canada are self-regulated, those in five provinces (the four maritime provinces and Manitoba) remain without that status. It almost appears as if national interest in the quest for self-regulation has diminished since the majority of dental hygienists now hold that status.

The CDHA, however, as one of its "Ends" policies, still seeks self-regulation for the remaining five provinces. The hygienist in downtown Vancouver or Toronto might ask

"THE WEAKEST LINK" ... continued on page 136

"Le maillon le plus faible"

par Salme Lavigne,
H.D., B.A., M.Sc.(H.D.)

En 1974, les hygiénistes dentaires du Québec accédaient à un régime d'auto-réglementation, en formant l'Ordre des hygiénistes dentaires du Québec. Elles ne savaient pas alors qu'elles étaient les pionnières d'un mouvement national ! Il s'est cependant écoulé passablement de temps avant que le pas suivant ne soit franchi, soit précisément 26 ans. L'Ontario avait travaillé très activement pendant de nombreuses années à la poursuite de l'auto-réglementation, mais l'Alberta y est parvenue avant, en 1990. En Ontario, l'approbation de l'auto-réglementation fut obtenue en 1991, et la loi proclamée en 1993. La Colombie-Britannique est passée à l'auto-réglementation peu après, en 1995, et la Saskatchewan emboîtait le pas en 1998. Bien que cela signifie que plus de 92 p. cent des hygiénistes dentaires du Canada soient sous un régime d'auto-réglementation, celles de cinq provinces (les quatre provinces maritimes et le Manitoba) restent privées de ce statut. Il pourrait presque sembler qu'au niveau national l'intérêt vis-à-vis cette quête vers l'auto-réglementation ait diminué, maintenant que la majorité des hygiénistes dentaires jouit de ce statut.

Toutefois, selon l'une de ses politiques de "Fins", l'ACHD reste à la poursuite de l'auto-réglementation pour les cinq provinces qui restent. Les hygiénistes du centre-ville de Vancouver ou de Toronto peuvent se demander en quoi peut bien les toucher l'absence d'auto-réglementation à

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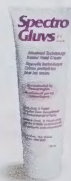
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1. Jain P, Vargas M, Denehy G, & Boyer D. *American Journal of Dentistry* Feb 1997; p.21.
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3. #1 Recommended sensitivity toothpaste by Dentists & Hygienists – Data on file, Block Drug Company (Canada) Ltd.

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Mississauga, Ontario, September 21–23, 2001

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"Just a hygienist..."

by Brenda Fortune

Quite a few years ago, my daughter came rushing home from school, all excited about the dental hygienist who had visited her school and shown the class how to brush their teeth properly. After she showed me what she had learned, I explained that I had been telling her the same thing for years. She replied, "Yes, but you're just a mother."

I didn't bother countering her child's logic at the time, but lately I have been thinking about her comment in relation to my current professional situation. I am sometimes referred to as "just the hygienist." You know the scenario—I have someone in my chair for their first visit and they ask, "Are you the dentist?" And I've caught myself saying, "No, I am just the hygienist."

I was recently asked by a former co-op student to be a reference on her dental hygiene application. She said she was not pleased with her first-term grades in her prerequisite courses but that she was determined to get into dental hygiene even if it took several attempts. This reminded me of my own quest many years ago to get into the profession of my choice. It took two tries for me, but I was determined to become a dental hygienist.



I was telling this to a friend the other day and she asked me why I hadn't gone "all the way" and become a dentist instead of settling for "just" dental hygiene.

So I started to think about why I had wanted to become "just" a dental hygienist and why I have stayed with it so long.

A few situations came to mind. One was the client who was very nervous about a dental visit and the first step for her was having her teeth scaled. I knew how she felt about being

in my chair, so I took things very slowly and gently and did my best to desensitize her. She left smiling and very pleased with herself that she had overcome some of her fears. She was very appreciative of my caring attention.... But I am "just the hygienist."

What about the other client who was in my chair for a recall and I noticed a small lump that wasn't there at the last appointment. I mentioned it to the dentist who referred her to have it checked and, sure enough, an early diagnosis of oral cancer ends with a good result.... But I am "just the hygienist."

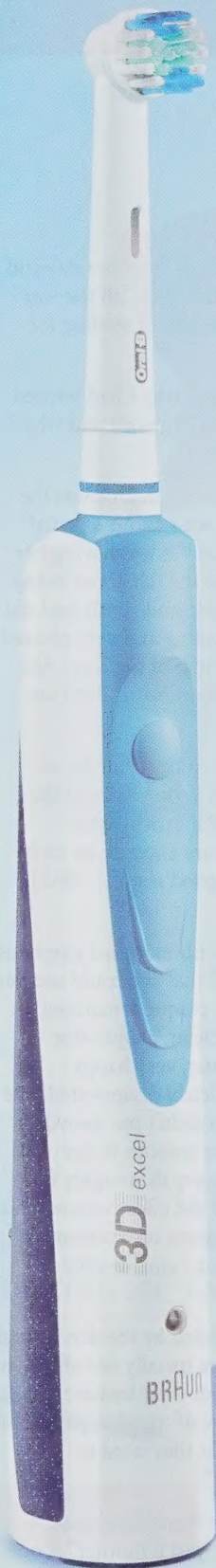
There was the client who presented with marginal gingivitis that bled spontaneously. I mentioned that she could use her tongue to feel the difference between plaque remaining on her teeth and the smooth texture of clean, plaque-free enamel. She came back six months later, very happy because the inflammation had completely disappeared. She found the tongue test very useful and didn't put away her toothbrush until her teeth were glossy smooth to her tongue. She had been told to brush more thoroughly for years but had had no easy way to test the effectiveness. This method worked well for her. Oral hygiene instructions really need to be individualized.... But I am "just the hygienist."

Quite often clients are a little intimidated by the dentist and won't ask questions. However, they are usually not afraid to ask the hygienist for clarification about their treatment plans. It is rewarding to provide peace of mind to people by taking the time to explain clearly what they need to know.... But I am "just the hygienist."

There are as many stories as there are dental hygienists. These are just a few examples. Being "just a mother" is one of the greatest understatements of our time. I believe the same could be said for being "just a hygienist." 

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1. Warren PR, et al. *Am J Dent*. 2001, in press. 2. van der Weijden GA, et al. *J Dent Res*. 2001; 80(special issue): 119. Abstract 672.
3. Sharma N C, et al. *J Dent Res*. 2001; 80(special issue): 548. Abstract 171. Visit our websites at www.braun.com and www.oralb.com
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EXECUTIVE DIRECTOR'S MESSAGE

MESSAGE DE LA DIRECTRICE GÉNÉRALE

Make a difference...

by Susan A. Ziebarth,
CDHA, Executive Director

If you think you are too small to make a difference, you have never been in bed with a mosquito.

—*Body Shop T-shirt, 1994*

This year, 2001, is the Year of the Volunteer. In my personal life, I volunteer on two boards. But one evening last week, after a very long and frustrating meeting, I asked myself, "Why do I do this?" I am not alone in asking this question. The latest Statistics Canada time use survey (1998) shows that the levels of time stress have been rising dramatically in the 1990s. Thirty-eight per cent of working mothers are now classified as "severely" time-stressed in a 10-item questionnaire. No wonder—they put in 74 hours a week of paid and unpaid work. As a member of many nominations committees over the years, I find that lack of time is the main reason people give for not volunteering.

So why do some people donate a portion of their time? Maybe they believe they can be a positive influence, have fun, and learn some new skills. Perhaps they believe they will feel more connected to their communities and be more appreciated. Working for a cause can build new bonds, friendships, and excitement. Reaching your goal is exhilarating.

What are some of CDHA's goals? We want the public to know and understand the role of the dental hygienist. We want dental insurance providers to recognize dental hygiene services for reimbursement. We are working toward increasing the diversity of practice settings and ensuring that dental hygienists can readily practise in all jurisdictions across the country with minimum constraints and barriers. There are many more goals that might pique your interest and fire up your professional pride.

What can CDHA do to help you give your time and ensure that your voice is part of the strong, influential, collective voice of dental hygiene? We need to make good use of your time and your talents. We need to define tasks clearly and make sure we thank you and recognize your contributions. We need to respect your time availability and structure our projects so the hours you donate are used to good purpose.



Faites une différence...

par Susan A. Ziebarth
ACHD, directrice générale

Si vous vous pensez trop petite pour faire une différence, vous n'avez jamais couché avec un maringouin.

—*T-shirt du Body Shop, 1994*

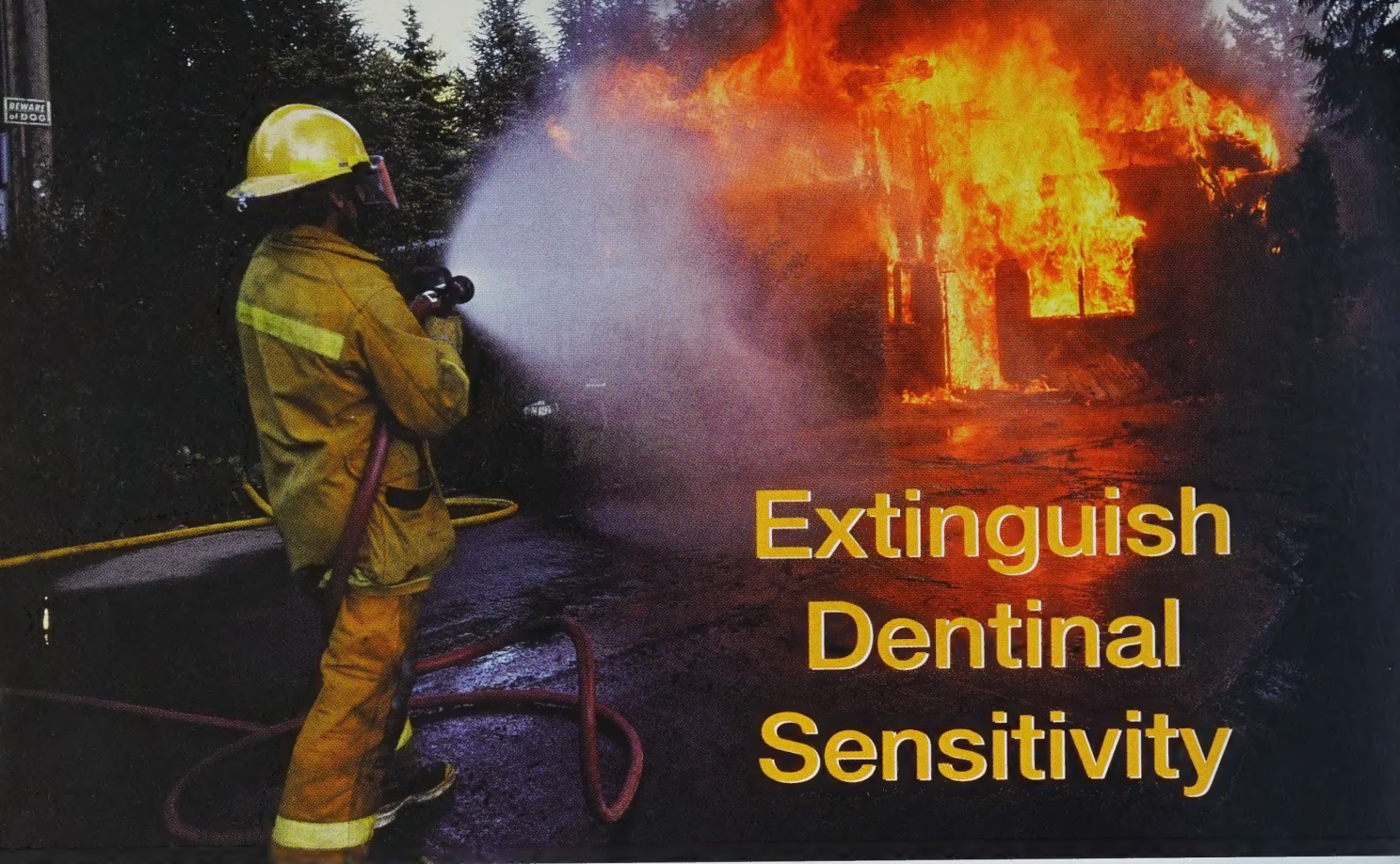
Cette année 2001 est l'Année du bénévolat. Dans ma vie personnelle, je suis membre bénévole de deux conseils d'administration. Mais un soir de la semaine passée, après une réunion très longue et pénible, je me suis demandé: "Mais pourquoi diable est-ce que je fais ça?" Je ne suis pas la seule à me poser cette question. La dernière enquête de Statistique Canada sur l'utilisation du temps (1998) montre que les niveaux de stress relié au temps ont grimpé de façon dramatique au cours des années 1990. Dans un sondage de 10 questions, on a découvert que trente-huit pour cent des mères au travail sont maintenant classifiées comme "gravement" stressées par le temps. Pas étonnant: elles travaillent 74 heures par semaine, si on combine travail rémunéré et travail non rémunéré. En tant que membre de nombreux comités de recrutement au cours des années, j'ai trouvé que le manque de temps est la principale raison invoquée pour ne pas faire de bénévolat.

Mais pourquoi donc certaines gens font-elles donc don d'une partie de leur temps? Peut-être croient-elles qu'elles se sentiront plus branchées à leurs collectivités et qu'elles seront plus appréciées. Travailler pour une cause peut tisser de nouveaux liens, de forger de nouvelles amitiés et créer de l'excitation. Il est grisant d'atteindre son but.

Citons quelques-uns des objectifs de l'ACHD. Nous voulons que le public connaisse et comprenne le rôle de l'hygiéniste dentaire. Nous voulons que les fournisseurs d'assurance dentaire reconnaissent les services d'hygiène dentaire aux fins de remboursement. Nous travaillons en vue d'augmenter la diversité des milieux de pratique et de permettre aux hygiénistes dentaires de pratiquer facilement dans toutes les juridictions à travers le pays avec un minimum de contraintes et d'obstacles. Il y a encore beaucoup d'autres objectifs qui peuvent susciter votre intérêt et enflammer votre fierté professionnelle.

Que peut faire l'ACHD pour vous aider à donner votre temps et vous assurer que votre voix se mêle à celle du grand chœur, voix forte et influente de la profession de l'hygiène dentaire? Nous devons faire bon usage de votre temps et de vos talents pour respecter votre disponibilité et structurer

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ORAL-B and CDHA are happy to announce our newest award recipients:

The 2001 Oral-B/CDHA Dental Hygiene Student Scholarship goes to **Ibtesam Issa** for her studies.

The Graduate Student Research Award for Masters Program goes to **Alnar Altani** for her study on the effects of oral hygiene in-service training of care-aides on the oral health of institutionalized elders. This type of research will assist in the drafting of recommendations to administrative staff to meet the oral health needs of institutionalized residents.

The Graduate Student Research Award for Doctorate Program goes to **Sharon Compton** for her study of mentoring relationships between junior and senior faculty members. This type of research will specifically enhance faculty development programs for dental hygiene educators and could outline new approaches to mentoring practices to keep up with changes in teaching and learning environments.



The CDHA would like to extend special thanks to Oral-B for its belief in the importance of research in our field and its continued financial support of the Dental Hygiene Student Scholarship, Masters, and Doctorate Research Awards. We are grateful for our partner's active participation in our efforts to support our dental hygienists in furthering their studies and ultimately making a difference in clients' lives.

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COLGATE and CDHA are pleased to announce the latest winner of our award:

The Colgate/CDHA Community Health Award goes to **Jane Waites** and the **York Region Dental Hygienists Society** for their project Community Oral Health Care Plan—ALS Dental Hygiene Outreach Program. The official presentation will take place at the CDHA's 12th Annual Professional Conference in Mississauga this coming September.

Congratulations to all our winners and a special thank-you to all our applicants. The quality of the competition shows the dedication and professionalism that has brought dental hygiene so far in the last 50 years.

Cross-Canada Review of National Dental Hygiene Week™ Initiatives

A new feature begins this month—highlighting successful awareness activities that are going on across the country. In this issue, we focus on Ontario.

The **Ontario Dental Hygienists' Association (ODHA)** members have identified public awareness as a top priority so the association takes an aggressive approach to promoting both dental hygienists and the profession. ODHA produces a variety of materials to help members with their ongoing community outreach programs, thus ensuring that the message about dental hygiene is consistent across the province.

Following are some of their public awareness activities in 2000:

- The ODHA 30-second television commercial was aired 109 times on ONtv.
- A two-page insert appeared in October Reader's Digest magazine.

- A four-colour poster appeared in the October 14 issue of the Toronto Star newspaper.
- ODHA's 30-second radio commercial aired 35 to 40 times on Talk 640 before NDHW™.
- ONtv's health program, during evening newscasts, featured the ODHA on day one of NDHW™.
- Media releases to newspapers, radio, and cable TV stations in Ontario produced positive coverage.
- Toronto Mayor Mel Lastman declared National Dental Hygiene Week™ in the Toronto area and provided a written proclamation for the ODHA.
- Approximately 380 dental hygiene colouring posters and 7,000 promotional brochures were requested by members.
- Finally, there were 1,200 hits on the web site during October—twice as many as in 1999.

Thanks to Joanne Emerson of ODHA for sharing her province's initiatives.

A Time to Remember

OUR 50th ANNIVERSARY CALENDAR

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Only two months until the CDHA 50th Anniversary Calendar—a celebration of the proud history of dental hygiene in Canada. Look for it this September, together with a special commemorative edition of *Probe*.

The finishing touches on the calendar are currently underway. We send our heartfelt thanks to all of the provincial associations, and their members, who sent in photos and archival material for the calendar. By joining together and sharing all this history, we have learned more about the bonds we share in our profession and have produced a memorable item that will remain a keepsake for years to come.

This anniversary calendar will provide you with a 16-month salute to our profession as it looks at the past, present, and future of dental hygiene in Canada. The calendar is full of ideas to help you celebrate the 50th anniversary of dental hygiene in Canada. It will encourage you to continue your efforts to promote the profession and the integral role you play in the oral health of your clients. Key Canadian Dental Hygienists Association (CDHA) dates for the remainder of 2001 and 2002 will also be at your fingertips, such as the renewal date for your membership in the CDHA and the deadline for applications for the National Dental Hygiene Certification Board exams.

Our commemorative calendar, featuring noteworthy moments from years gone by, will be an effective tool in your operatory too. You'll be able to share some interesting historical facts with your clients. For example, did you know that early toothbrushes used bristles from the necks of cold-climate pigs? The calendar can be a interesting conversation piece and help you share some of the history behind all what you do to keep Canadians talking, smiling, and laughing for a lifetime. We thank our national sponsor, 3M ESPE, for its ongoing participation in this project.

September 2001, the first month of the calendar, will pay special tribute to the pioneers of dental hygiene in Canada and will get you thinking about what you can do to prepare for National Dental Hygiene Week™ (NDHW™) this October. We encourage you to start thinking now about the NDHW™ activities you will undertake in your community.

And don't forget to look for our television ads airing this September and October! The English ad will be broadcast during CBC Newsworld's *Health Matters* between September 3 and October 25, 2001, Monday through Thursday between 7:30 p.m. and 8 p.m. ET. The French ad will air on RDI's *Grands Reportages* between September 4 and October 23, 2001, on Tuesdays between 8 p.m. and 9 p.m. ET.



Une fenêtre sur le passé

LE CALENDRIER DU 50^e ANNIVERSAIRE DE L'HYGIÈNE DENTAIRE AU CANADA

Le calendrier tant attendu du 50^e anniversaire arrivera à vos portes dans moins de deux mois. En fait, il vous parviendra dès septembre accompagné d'une édition commémorative de *Probe*.

Nous en sommes à mettre la dernière main au calendrier et tenons à exprimer nos remerciements les plus sincères à toutes les associations provinciales et à leurs membres qui nous ont facilité la tâche en nous faisant parvenir des photos et des archives. En s'unissant et en remontant ensemble le fil des années, non seulement nous avons renforcé nos liens professionnels, mais nous avons aussi réussi, en réalisant une rétrospective de notre profession au Canada, à créer un souvenir impérissable.

Étalé sur 16 mois, le calendrier se veut un hommage à notre profession, car il jette un regard sur le passé, le présent et l'avenir de l'hygiène dentaire au Canada et vous encourage dans vos démarches pour promouvoir la profession et le rôle que vous jouez dans la vie buccodentaire de vos clients. Vous aurez ainsi à la portée de la main les dates importantes pour l'Association canadienne des hygiénistes dentaires pour les quatre derniers mois de 2001 et l'année 2002, telles que la date de renouvellement de votre adhésion à l'Association canadienne des hygiénistes dentaires et la date butoir d'envoi des demandes pour se présenter aux examens du Bureau national de la certification en hygiène dentaire.

Le calendrier anniversaire illustrera des souvenirs mémorables des 50 dernières années et vous servira dans vos fonctions quotidiennes. Vous pourrez communiquer des faits historiques fort intéressants à vos clients. D'ailleurs, saviez-vous que les poils des premières brosses à dents provenaient du cou de porcs des «pays nordiques»? Il ne s'agit là que d'un exemple de nombreux sujets de conversation que suscitera le calendrier. Celui-ci vous permettra aussi de raconter l'histoire de vos efforts et de vos gestes grâce auxquels la population canadienne sont en mesure de parler, de sourire et de rire toute la vie. Entre autres, la participation continue de Nous remercions notre commanditaire national, soit 3M ESPE, dont la participation continue nous a permis de faire ce calendrier commémoratif.

Le mois de septembre 2001, le premier du calendrier, rendra un hommage tout particulier aux pionniers de l'hygiène dentaire au Canada et vous servira d'aide-mémoire pour la Semaine nationale de l'hygiène dentaire^{MC} (SNHD^{MC}) en octobre et les activités que vous organiserez dans votre communauté. Commencez dès maintenant à faire vos préparatifs à cert égard.

N'oubliez pas de garder les yeux bien ouverts, car nos annonces publicitaires seront diffusés en septembre et en octobre. La version anglaise sera diffusée pendant *Health Matters*, présentée sur les ondes de CBC Newsworld, du lundi au jeudi entre 19 h 30 et 20 h (HNE) à partir du 3 septembre jusqu'au 25 octobre 2001. Le message français sera diffusé à compter du 4 septembre pendant les *Grands Reportages* sur les ondes de RDI, le mardi entre 20 h et 21 h (HNE), et ce jusqu'au 23 octobre 2001.



what the lack of self-regulation in P.E.I. has to do with them. Well, it has everything to do with them. Dental hygiene is a very small profession and CDHA realizes that it cannot move any of the "Ends" forward with any expediency if it lacks uniformity in regulation. In other words, we cannot move ahead as a profession. A perfect example of this is the issue of insurance reimbursement. Because there are still provinces where dental hygienists work under the umbrella of dentistry, insurance companies are unwilling to regard dental hygiene as an autonomous profession. This is detrimental to the independent practitioner in downtown Vancouver who is not able to collect insurance reimbursement. Another example of this mushrooming effect is the current Labour Mobility negotiations that are part of the Federal Agreement on Internal Trade. The authorities responsible for regulating the practice of dental hygiene have been at the table for quite some time, trying to decide on one uniform system of licensure requirements that will be acceptable for all provinces. Unfortunately, in some of the jurisdictions where dentistry governs dental hygiene, there appears to be a great deal of resistance to even mandating our own National Board Examination for licensure! CDHA's new educational position statement requires the baccalaureate degree for entry to practice for those students beginning dental hygiene programs in the year 2005. This also could pose a problem—it is the regulatory authorities who, once again, will ultimately control the entry to practice. If we are to achieve this goal, which will solidify our professionalization, we must achieve uniform autonomy.

Although we appear to be close to this with 92 per cent of hygienists self-regulated, we are still far away from true professional autonomy. Remember the components of true professionalism: a National Code of Ethics; National Educational Standards (that is, a National Board Examination); educational credentials at the degree level; peer assessment through an accreditation process; a unique body of knowledge; and self-regulation. When only some

provinces have the majority of these components, professional status cannot be recognized nationally. This is truly a case of being only as strong as our "weakest link." It is therefore imperative that we help dental hygienists in the non-self-regulating provinces achieve the same status and privilege of the majority of dental hygienists in Canada—self governance.

So how can we, as individuals, help the provinces who are lagging behind? If you live in a self-regulated province and have a friend or colleague residing in a province that is not, call them up and ask them what their association is doing in terms of achieving self-governance. Also, ask them what their opinion is of self-governance and find out if they really understand what it is and what it means. It is often the case that grassroots hygienists do not truly understand what is meant by self-regulation. We spend our careers educating our clients about the merits of achieving good oral health, yet we tend to forget about educating ourselves in matters often considered to be "political."

Self-regulation is not "independent practice"; self-regulation does not mean you will change your practice environment or your job; self-regulation will not change the relationship between you and your employer. What self-regulation *will* do is give dental hygienists an equal voice with other health professions, including dentistry. You will no longer need to convince dentistry to get an issue on the table. If, for example, you wish to legalize the administration of local anesthesia in your province, you will be able to lobby the government directly without having to convince the dental board to move it forward to the provincial legislature. You may not always achieve what you want. However, you will be able to deal with your own issues and decide on your own standards and requirements of licensure and education. In other words, you can behave like a true professional!

Without universal self-regulation, dental hygiene as a health discipline lacks the ability to defend itself and does not have equal status with other health professions. This could ultimately have devastating effects on all Canadian dental hygienists. If you value your profession, you must begin to take notice of these issues and educate yourself or those who need your assistance. Don't let the "weakest link" control our professional destiny. The goal of self-regulation for all Canadian dental hygienists is CDHA's primary concern. 

MAKE A DIFFERENCE (continued from page 131)

Senior dental hygiene volunteers have contributed to the emergence of dental hygiene as a profession. There is a role for everyone so don't wait to be asked—step forward today. Every region in the country has projects underway. Don't worry that you might not have a specific skill set. Your brain and your enthusiasm can help you acquire one.

Do you volunteer? If so, why? Or if not, why not? Stop for a moment and think about the answers to that question. I seriously thought about ending my volunteer work after that frustrating meeting. And why didn't I? Because I honestly believe in that T-shirt slogan: I believe I can make a difference; I also believe you can too. 

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“LE MAILLON LE PLUS FAIBLE” (suite de la page 123)

l'Île-du-Prince-Édouard. Hé bien, cela les touche, et de très près. L'hygiène dentaire est une profession aux effectifs très restreints et l'ACHD réalise qu'elle ne peut pas faire avancer une des “Fins” avec une quelconque rapidité s'il y a manque d'uniformité dans la réglementation. Autrement dit, nous sommes bloquées dans notre avancement en tant que profession. Un exemple parfait de cette situation est la question du remboursement des assurances. Parce qu'il y a encore des provinces où les hygiénistes dentaires travaillent sous le parapluie des dentistes, les sociétés d'assurance refusent de considérer l'hygiène dentaire comme une profession autonome. Cela nuit à la praticienne indépendante du centre-ville de Vancouver, pour qui il est impossible de recouvrer un remboursement de l'assurance. Autre exemple de cet effet champignon : les négociations actuelles sur la mobilité de la main-d'oeuvre dans le cadre de l'entente fédérale sur le commerce international. Les autorités responsables de la réglementation de la pratique de l'hygiène dentaire sont à la table depuis déjà un certain temps, à essayer de décider sur un système uniforme d'exigences touchant le permis de pratique qui seraient acceptables à toutes les provinces. Malheureusement, dans certaines juridictions où la dentisterie contrôle l'hygiène dentaire, il semble qu'il y ait une grande résistance à même de mandater notre propre Bureau national de la certification pour l'octroi du permis de pratique ! La nouvelle déclaration de position de l'ACHD sur l'éducation exige le niveau du baccalauréat pour l'admission à la pratique pour les étudiant(e)s qui entreprendront des études en hygiène dentaire en 2005. Cette exigence pourrait aussi faire problème : ce sont les autorités de réglementation qui, là encore, contrôleront l'accès à la pratique. Si nous sommes pour atteindre ce but, qui solidifiera notre professionnalisation, nous devons atteindre une autonomie uniforme.

Même si nous semblons être proches de ce but, avec 92 p. cent des hygiénistes en régime d'auto-réglementation, nous sommes encore très loin d'une véritable autonomie professionnelle. Qu'on se rappelle des composantes d'un véritable professionnalisme : un code d'éthique national ; des normes nationales d'enseignement (c.-à-d., un Bureau national de certification) ; des états de service en enseignement au niveau du diplôme ; une évaluation par les pairs au moyen d'un processus d'accréditation ; un ensemble de connaissances unique ; et l'auto-réglementation. Lorsque seulement quelques provinces possèdent la majorité de ces composantes, le statut professionnel ne peut être reconnu au niveau national. Il s'agit là véritablement d'un cas où on est seulement aussi fort que notre “maillon le plus faible”. Il est donc impératif que nous aidions les hygiénistes dentaires des provinces où l'auto-réglementation n'existe pas encore à atteindre le même statut et les mêmes privilèges que la majorité des hygiénistes dentaires du Canada, c'est-à-dire l'auto-réglementation.

Donc, comment nous est-il possible, à titre individuel, d'aider les provinces restées sur place ? Si vous vivez dans une province où il y a auto-réglementation et que vous avez une amie ou collègue qui réside dans une province où ce n'est pas le cas, appelez-la et demandez-lui ce que son association fait pour atteindre un statut d'auto-

réglementation. Demandez-lui aussi quelle est son opinion sur l'auto-réglementation et essayez de voir si elle comprend réellement de quoi il s'agit et quelle en est la signification. Souvent les hygiénistes de la base ne comprennent pas réellement ce qu'on entend par auto-réglementation. Nous passons notre carrière à éduquer nos clients sur les mérites de la bonne santé buccale, et nous oublions de nous éduquer nous-mêmes sur des questions souvent considérées comme “politiques”.

L'auto-réglementation n'est pas la “pratique indépendante” ; l'auto-réglementation ne veut pas dire que vous changerez votre milieu de pratique ou votre travail ; l'auto-réglementation ne changera pas la relation entre vous et votre employeur. Ce que l'auto-réglementation fera, c'est de donner aux hygiénistes dentaires une voix égale à celle des autres professions de la santé, y compris la dentisterie. Vous n'aurez plus besoin de convaincre les dentistes de mettre un enjeu sur la table. Si, par exemple, vous souhaitez légaliser l'administration de l'anesthésie locale dans votre province, vous serez capable de faire des représentations directement auprès du gouvernement sans être obligé(e) de convaincre le Bureau des dentistes de porter la question à l'attention de la législature provinciale. Il se peut que vous n'obteniez pas tout ce que vous désirez. Mais vous serez capable de traiter de vos propres enjeux et de décider quels sont vos propres normes et exigences pour l'octroi du permis de pratique et l'éducation. Autrement dit, vous serez en mesure de vous comporter comme de véritables professionnelles !

Sans auto-réglementation universelle, l'hygiène dentaire en tant que discipline de la santé est privée de la capacité de se défendre elle-même et n'a pas un statut égal à celui des autres professions de la santé. Cette situation pourrait éventuellement avoir de effets dévastateurs sur toutes les hygiénistes dentaires du Canada. Si vous valorisez votre profession, vous devez commencer à prendre note de ces enjeux et à vous renseigner et à informer celles qui ont besoin de votre assistance. Ne laissez pas le “maillon le plus faible” contrôler votre destinée professionnelle. L'auto-réglementation pour toutes les hygiénistes dentaires du Canada, voilà le but dont l'ACHD a fait une de ces premières préoccupations. 

FAITES UNE DIFFÉRENCE (suite de la page 131)

nos projets pour faire en sorte que les heures que vous donnez servent à bonnes fins. Des bénévoles seniors en hygiène dentaire ont contribué à l'émergence de l'hygiène dentaire comme profession. Tout le monde peut jouer un rôle ; n'attendez donc pas qu'on vous le demande : présentez-vous dès aujourd'hui. Chaque région du pays a des projets en cours. Ne vous inquiétez pas de ne pas posséder un ensemble particulier de compétences. Votre matière grise et votre enthousiasme peuvent vous aider à en acquérir.

Faites-vous du bénévolat ? Dans l'affirmative, pourquoi ? Dans la négative, pourquoi pas ? Arrêtez-vous un moment et pensez aux réponses que vous donnez à cette question. Après cette réunion frustrante, j'ai sérieusement songé à mettre fin à mon travail bénévole. Et pourquoi ne l'ai-je pas fait ? Parce que je crois honnêtement à ce slogan de T-shirt : Je crois que je peux faire une différence ; je crois que vous le pouvez aussi. 



Dr. Herbert Veisman



Dr. Livia Silvestri

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Alternative Dental Hygiene Practice: Access, Cost, and Harm Considerations

A REVIEW PREPARED FOR THE COLLEGE OF DENTAL HYGIENISTS OF ONTARIO (APRIL 5, 2001)

by D.W. Lewis, DDS, DDPH, MScD, FRCD(C) Professor Emeritus, University of Toronto

ABSTRACT

This review summarizes the accessibility, cost, and safety issues for patients when dental hygienists provide self-initiated dental hygiene care unsupervised by dentists. In considering these issues, it is important to recognize that demographic and dental disease changes will continue to greatly increase the public's need for exactly the kinds of preventive and maintenance dental services that dental hygienists primarily render. Despite deficiencies in the amount and type of data needed in the published literature to give high-quality evidence, sufficient information is available to suggest the following conclusions: Unsupervised dental hygiene care in non-traditional practice settings will increase public access, notably for special groups currently with poor access, both to needed preventive dental hygiene services and, by increased patient referrals, to dentists' therapeutic services. This unsupervised dental hygiene care can be provided at lower cost than this same care in supervised dental practices. Unsupervised dental hygiene practice does not increase risk to the health of the public nor pose undue harm to patients.

INTRODUCTION

In 1984, Bader *et al.* (1984) expressed surprise at the paucity of empirical data available from the analysis of traditional dental hygiene practice records in view of the then-active discussions about the changing responsibilities of dental hygienists in oral health care and the development of new forms of dental hygiene practice. Five years later, in 1989, the prestigious Institute of Medicine in Washington, D.C., in the part of its report on proposed changes to the regulations governing numerous allied health professions, also noted the lack of published research on the accessibility, risk, quality, and cost associated with these changes. Interestingly, the report singled out the negative consequences this lack had for dental hygiene:

Rhetoric and political power frequently substitute for evidence and rational decision making.... One of the clearest examples of this problem is the case of dental hygiene services (Institute of Medicine 1989).



Purpose

Based on published literature, this review summarizes the accessibility, cost, and patient safety (harm) implications when self-initiated dental hygiene care, unsupervised by dentists, is provided by dental hygienists in a variety of alternative practice settings rather than in dentists' offices.

Currently in Ontario, there is conflict between dentistry and dental hygiene—both self-regulating professions—whether dental hygienists need an order from a dentist before they perform certain dental services (e.g., scaling, root planing, curettage). Simply put, the issue is whether these acts can be self-initiated by dental hygienists or whether they must first be subjected to a specified level of dentist supervision (the “order”). The order requirement and the divergent views about it have been thoroughly evaluated elsewhere (Ontario 1996) and will not be reviewed here. However, it would be disingenuous not to mention this dispute because of its underlying relevance to the topics of this report.

Alternative practice

Practice settings where dental hygienists would provide the self-initiated periodontal services mentioned above, along with other preventive dental hygiene services and health promotion, could take place in traditional dental offices involving new contractual arrangements between dentists and dental hygienists. However, it is envisaged that most self-initiated dental hygiene care would be provided in a wide variety of alternative or non-traditional practice set-

tings. These could include care provision to seniors and other special groups in long-term care facilities, institutions, and community centers (Johnson 1998). Some fixed and mobile dental hygiene practices serving a broad range of patients have already been established by dental hygienists in Canada, although none of them is truly independent of some level of dentist supervision or direct contact. Descriptive examples of these practices from British Columbia and Ontario can be found in various references (Heisterman 1998; Brodie 1996; Moore 1999; Perry 1999; Spencer 1997). (From reading these, it appears that dental hygienists working in British Columbia have fewer constraints imposed by dentistry on their delivery of a full range of dental hygiene services than have Ontario dental hygienists.)

The establishment of independent dental hygiene practices, by probably a very small number of dental hygienists, mainly to serve the dental hygiene care needs of the general public in selected locations, may also occur as has happened in a number of American states, e.g., California, Colorado, and Washington. Despite this possible change in future dental hygiene practice arrangements, it is expected that most dental hygienists will continue their employment in traditional dentist offices (Clovis 1999).

Changing disease and treatment patterns

Demographic and epidemiologic changes have influenced, and will continue to influence, the oral health status of persons in North America and the kinds of evidence-based preventive and therapeutic services they need (Ismail and Lewis 1993; Lewis and Ismail 1995). People are living longer; most have fewer and less severe carious teeth and greater and longer retention of their natural teeth (Ismail and Lewis 1993; Lewis and Ismail 1995; Leake 2000; United States 2000). This has resulted in less edentulism, even in older adults, but greater potential for more gingivitis and mild periodontitis associated with these retained teeth.

Not surprisingly, these changes in disease prevalence and tooth retention have resulted in changes to the mix of dental services being provided. High percentages of the total dental services to privately insured adult patients (Porter *et al.* 1999; Eklund *et al.* 1997) and to publicly insured seniors in Alberta (Thompson and Lewis 1994) are maintenance in nature, involving preventive services and prophylaxis. And, over time, there have been decreases in the provision of restorations and extractions and increases in preventive services, especially periodontal (Eklund *et al.* 1997; Thompson and Lewis 1994). Based on these epidemiological and service trends, the need for the kind of preventive and health promotion dental services that dental hygienists primarily provide is predicted to increase (Lewis 1989).

Oral health status and care inequities

Despite the foregoing improvements in oral health status and in the dental care services needed and being received by some, inequities in oral health status and access to dental services remain in North America. The Surgeon General of the United States (United States 2000) recently called this the "silent epidemic," whereby the poor, especially chil-

dren, the elderly, and other marginalized and disadvantaged groups including many elderly residing both at home and in long-term care facilities, have not benefited from the overall improvements in oral health and access to care.

The burden of suffering of such persons has been exacerbated by recent budgetary cutbacks in funding for public dental care programs. Diminished access to care is particularly evident in the growing population of elderly persons in Ontario (Leake 2000). It has been made worse by the past failures of dentists in private practice, despite some good intentions, to provide the elderly with needed dental care outside traditional office settings (Leake 2000; MacIntee *et al.* 1992).

Besides the benefits to be derived from better personal oral hygiene and professional dental prophylaxis that persons experiencing these inequities need, many require restorative and prosthetic dental care from a dentist. The important role that dental hygienists play in helping patients achieve this treatment need is described in the next section.

ACCESS

The inability of private dental practice to meet the needs of special patient groups such as those just described underscores the difference between the terms *availability* and *accessibility*. Dental care may be present in a geographic area—and thus is theoretically available—but may not be accessible to all residents of the area.

ABRÉGÉ

Cette revue résume les questions d'accessibilité, de coût et de sécurité pour les patients lorsque des hygiénistes dentaires offrent de leur propre chef des soins d'hygiène dentaire non supervisés par des dentistes. Lorsqu'on se penche sur ces questions, il est important de reconnaître que les changements démographiques et l'évolution des maladies dentaires vont continuer à augmenter grandement le besoin du public pour le genre de services dentaires qui sont du ressort primordial des hygiénistes dentaires dans les domaines de la prévention et de la maintenance. Malgré que la littérature publiée comporte des lacunes dans la quantité et le genre de données nécessaires pour constituer une preuve de haute qualité, il existe suffisamment d'information pour suggérer les conclusions suivantes : Les soins d'hygiène dentaire non supervisés prodigués dans des milieux de pratique non traditionnels vont accroître l'accessibilité du public à ces services, notamment pour les groupes spéciaux qui souffrent présentement d'une accessibilité réduite, à la fois aux services préventifs nécessaires en hygiène dentaire et, par une augmentation des références de patients, aux services thérapeutiques des dentistes. Ces soins d'hygiène dentaire non supervisés peuvent être prodigués à meilleur coût que ces mêmes soins dans les pratiques dentaires supervisées. La pratique de l'hygiène dentaire non supervisée n'augmente pas le risque auquel serait exposée la santé du public et ne comporte aucun effet iatrogénique chez les patients.

Barriers to accessibility and dental hygiene practice

Many factors, acting alone or in combination, affect accessibility to care: socio-economic status; cultural values; lack of transportation or of flexibility in getting time off work; physical disability or illness; lack of money or dental insurance; inadequate public insurance or programs; and negative attitudes about the importance of oral health and tooth retention (United States 2000).

Dental hygienists working in non-traditional practices could hardly be expected to make more than a small dent in this formidable list of barriers to care. They could, however, possibly provide less expensive preventive care, improve geographic accessibility by increasing the number and convenience of the sites where the care they render is available, and provide education to decrease the negative attitudes of some persons. But their main impact on the reduction of these barriers would result from their taking the full range of dental hygiene services—using mobile or on-site equipment—directly to persons who currently have difficulties and disabilities that prevent them from readily accessing traditional practices. Relative to the expense, the difficulties, and the anxiety created by transporting a patient with mobility problems to the unfamiliar surroundings of a dentist's office, Heisterman (1998) in British Columbia presented a better approach. She has described how even complex, lengthy dental hygiene procedures can be performed successfully in the security of the familiar surroundings of the institution where the patient lives. However, Heisterman, and the other dental hygienists in alternative practices mentioned earlier, regularly refer patients to dentists for care needs beyond the hygienists' scope of practice.

Independent dental hygiene practice

The most extensive documentation of the effect that dental hygienists in alternative practices have on access to care arises from published reports of the experimental demonstration program (1987–1990) involving independent dental hygienists in California (Perry *et al.* 1994, 1997; Freed *et al.* 1997; Kushman *et al.* 1996). The background and design of the research program, plus the legal challenges to it instigated by the California Dental Association, have been well described by Perry *et al.* (1994). They also reported that a similar follow-up study, which took account of the legal technicality that led to the first study's closure, was approved by the appropriate state agency in 1990 and was again underway, as of 1994.

A number of diverse aspects associated with access to care were analyzed in the California project:

1. In the five independent dental hygiene practices that provided relevant data over two years, it was revealed that many patients who were previously low dental users were nevertheless attracted to use the independent dental hygienists. For example, 41 per cent of initial new patients, and 49 per cent of the new patients who entered the program after it had been operating for 18 months, did not currently have or had never previously had a dentist (Perry *et al.* 1997).

2. Eight of the nine independent dental hygiene practices in the study accepted Medicaid patients, whereas earlier surveys of California dentists had revealed that very few dentists would accept Medicaid patients (Kushman *et al.* 1996).
3. Relative to the initial group of new patients, there was a shift suggestive of broader future access since the group of new patients entering after 18 months had different demographic characteristics, more like persons who historically in the United States have lower utilization of dental services (more non-whites and lower education and income levels) (Perry *et al.* 1997).
4. The recall potential of extant patients for future dental hygiene care was enhanced by the finding that 98 per cent of patients were satisfied with the care they had received from the independent dental hygienists (Perry *et al.* 1997).
5. Regarding "structural" access criteria, the independent dental hygiene practices in California (Freed *et al.* 1997), along with similar practices in Colorado (Astroth and Cross-Poline 1998), were found, on evaluative analysis, to have very acceptable patient "wait times" for appointments (fewer than 16 working days) and adequate time scheduled for prophylaxis for a child (45 minutes) and an adult (30 minutes), as well as acceptable needs-based (rather than fixed-interval-based) recall schedules in place. These and the other results cited above prompted the observation that independent dental hygiene practices seemed more accessible to the public than dentists' practices (Kushman *et al.* 1996).
6. However, in view of the conflict between dental hygiene and dentistry mentioned earlier, the most interesting feature of these California "access" findings was the high level of subsequent visits to dentists by patients as a result of the hygienists' referral efforts (these were required under the design of the plan). Although, as described earlier, many of the patients had previously been very low users of dental care, the follow-up survey assessing the results was striking: 88 per cent of patients who had a regular dentist prior to the hygienist visits, and 84 per cent of patients who did not have a regular dentist before, visited a dentist within 12 months after their hygienist care (Perry *et al.* 1997). If the results reported in point 5 above prompted the observation about the independent dental hygiene practices seeming more accessible (or friendly) to the public, then the results described in this paragraph would seem to indicate that the independent dental hygienists made dentists (and their work) seem more friendly to many of these patients. Whatever one's interpretation, the independent dental hygienists played a large role in directing the flow of patients, especially previous low utilizers, to dentists (Kushman *et al.* 1996).

COST

Dental hygienists make a substantial contribution to the preventive and periodontal services provided in dental practice. In one Australian study (Brown *et al.* 1994), the percent of the offices' total procedures that were periodontally related in dentists' offices employing dental hygienists (38 per cent) was twice as high on average as the percent of these services in offices not employing dental hygienists (19 per cent). Bader *et al.* (1984) reported that the work of dental hygienists in 13 Kentucky dental practices amounted to one-fourth of the offices' total production of dental services but just one-eighth of the gross billings. Some authors claim that dentists make a substantial profit from the work of their dental hygienists (Manga 1997) while others, after surveying the literature, are uncertain about this (Walsh 1987).

The purpose of this section is to examine what is known from the published literature about the differences in the cost of dental hygiene services when they are performed in private dental offices and when they are self-initiated by dental hygienists in non-traditional practices. Not discussed here are the broader economic issues such as efficiency in health care markets, dental hygiene prices in competitive markets, human resource substitution, and the rate of return for dental hygiene services—for example, the rate of return revealed by the findings of Bader *et al.* (1984). Nor will a theoretical analysis be attempted of the complex but important consideration of the potential long-term savings in dental costs and possible better quality of life that may result from broadened access to preventive dental services in alternative dental hygiene practices, particularly by irregular users of dental care both in the community and in long-term care facilities.

There are very few published sources that look at actual dental hygiene costs in non-traditional practices; only one published comparison was found.

Anecdotal reports by dental hygienists who have started non-traditional practices sometimes state that the cost savings arising from the simplicity of their practice arrangements are passed on to patients (Brodie 1996); however, specific details are not provided. Since, as previously discussed, dentists rarely practise extensively on-site in long-term care facilities (Leake 2000), there are no data on the cost of their provision of preventive dental services that might serve as a standard of comparison for current and future initiatives by dental hygienists.

Two reports not available in published journals (and not examined by the present author) estimated that dental costs would be lower for dental hygiene services if these services were self-initiated by dental hygienists in alternative practices. Brown (1995), in a study for the Alberta Dental Hygienists' Association, suggested that dental prices could be 20 per cent lower. MacDonald-Wright (1994) in a thesis reported that dental costs up to one-third less than current Ontario costs for the same services could be achieved.

The only published comparison of dental hygienist and dental office fees that was available for examination comes from the California demonstration project of independent

dental hygiene practice (Kushman *et al.* 1996). The authors compared the fees for various dental hygiene services provided by five office-based independent dental hygiene practices with the fees for dental hygiene services provided by about five dentists' practices located in the same geographic areas. Altogether, 29 dental practices were used in the fee comparisons.

The dental hygienists' fees were always lower than the adjacent dentists' mean fees for similar dental services (Kushman *et al.* 1996). The detailed comparison of fees was complicated by the common practice of bundling several individual fees into one (for example, a bundled maintenance recall fee consisting of a recall exam fee plus a prophylaxis fee with or without a fee for bitewing radiographs). Differences between the dental hygienists' preliminary oral examination fee and the dentists' examination fee also created problems for the analysis since the dentists apparently bill recall patients alternately every six months for a dentist's exam, then for a dental hygienists' preliminary oral exam at a lower fee. The least biased comparison, according to the authors, was the bundled maintenance recall fee for which they provided fee estimates that were both uncorrected and corrected to allow for the above-noted examination differences.

For a maintenance recall visit consisting of an examination, dental prophylaxis, and bitewing radiographs, the median difference was \$23 lower for the independent dental hygienist fees relative to the dentists' dental hygiene service fees. (The range of the differences for the five sites was \$11 to \$29, with the hygienists' fees always being lower [Kushman *et al.* 1996].) The overall percent difference in mean fees (calculated by the present author) was 25 per cent and the corrected percent difference in mean fees was much lower at 11 per cent. For a similar maintenance recall visit without the radiographs, the overall independent dental hygienists' mean fee was 34 per cent lower (calculated by the present author) than the dentists' mean dental hygiene fee, with the corrected mean percent difference being 15 per cent lower. It should be noted that the larger, uncorrected percent differences more closely represent the likely differences in the overall average charges (or billings) for maintenance recalls between dentists' and dental hygienists' practices. The smaller, corrected percent differences are an attempt to compare more closely, in a "pure" sense, dental hygienist fee differences for maintenance recalls in the two different types of practices.

PATIENT HARM

There can be no doubt that there is risk of harm to patients when they are treated by dentists and dental hygienists. It is equally clear that the overall risk of harm to patients from dental treatment is very low. Despite the occasional severe and unfortunate occurrence of patient harm, dental treatment—appropriately selected according to evidence for efficacy and to patient need, and carefully provided according to accepted practice standards—does much more good than harm.

The purpose of this section is to examine whether there is evidence that the risk of patient harm is greater when den-

tal hygiene care is self-initiated in alternative practices by unsupervised dental hygienists than when this care is rendered in traditional offices by supervised dental hygienists. The true answer to this question requires a comparison study of dental hygienists working in the two different modes of practice. No such study exists of the risk of harm to patients. Nevertheless, because of its importance, further discussion is needed about the likelihood of harm to the patients of unsupervised dental hygienists.

Since there has been no documentation of undue patient harm caused by dental hygienists (Ontario 1996), even in the Canadian provinces and American states where dental hygienists can legally give local anaesthetic injections (Sisty-LePeau *et al.* 1990), it is reasonable to assume that the presumption of harm persists in some who are against unsupervised dental hygiene practice. Given the reality of the very general and indirect nature of the current supervision of dental hygienists by dentists in private dental offices, if the provision of dental hygiene services such as dental prophylaxis, scaling, and root planing does not now result in undue patient harm in these offices, it is difficult to believe that these same services would cause patient harm when they are provided in unsupervised dental hygiene practices.

Some dental hygienists in non-traditional practices will provide dental hygiene care to the elderly, sometimes to medically compromised patients (Heisterman 1998), as well as to other patients with very poor oral hygiene and periodontal disease where bleeding during prophylaxis and scaling is anticipated. Some who oppose unsupervised dental hygiene practice may presume that such patients will not have medical histories carefully taken and assessed by unsupervised dental hygienists to see if they fit into the high- or moderate-risk endocarditis categories of the American Heart Association (Dajani *et al.* 1997) and thus need antibiotic prophylaxis prior to some dental hygiene services. This concern presupposes that the medical history-taking, interpretive skills, education, practice standards, and regulatory control of dental hygiene are deficient in this regard. The notion of such deficiencies has been rejected by a review body (Ontario 1996) and ignores the recognition that, as dental hygiene technology and dental hygiene's scope of practice grow, the preparatory education of dental hygienists must also grow (Johnson 1998). However, dental deficiencies with respect to medical histories do occur (Freed *et al.* 1997) and have been reported in a large survey in the United States where it was found that the updating of patients' medical histories by dentists was very poor (Morris and Bohannon 1997).

In the only comparative study yet published, Freed *et al.* (1997) compared a number of structural and process criteria in independent dental hygiene practices with the same criteria in a convenience sample of six general dental practices in California. (The dental practices were being assessed by one of the authors to see if they were eligible to participate in two different dental plans.) None of the criteria harms patients directly but, indirectly, deficiencies in them could bring harm to patients; thus, they are potential proxies for patient harm.

The structure of each practice (seven non-institutional dental hygiene and six dental practices) was evaluated by direct inspection (Freed *et al.* 1997). All the dental hygiene and dental practices were rated as completely or nearly completely acceptable on the criteria of "medical emergency preparedness," "after hours emergency care provisions," and "cleanliness." The criterion of "sterilization and infection control" was found to be acceptable in all seven dental hygiene practices but in just two of the six dental practices. Although lead aprons were consistently used in all practices, two of the dental hygiene and three of the dental practices were rated as unacceptable for "radiation safety" since thyroid radiation safety collars were not used consistently.

The process of care was assessed by patient record review (Freed *et al.* 1997) and involved 112 partly randomly sampled records from the six dental practices and 225 randomly sampled records from nine dental hygiene practices. The percent of records that were acceptable using the four criteria under the "medical/dental history" assessment is presented next. The percent of "present and completed medical histories" found in the patient records was identical and very high (97 per cent) for each of the two groups of practices. The recording and use of "medical alerts" (drug allergies and need for pre-medication) was more acceptable with the dental hygienists' records (81 per cent) than with the dentists' (63 per cent). The "follow-up of significant findings" (for example, on the medical history to check with the patient's physician if it is safe to proceed with dental treatment) was significantly more acceptable on the dental hygienists' records (77 per cent) than on the dentists' (17 per cent). Evidence on the patients' records that the medical history was updated at the start of each new sequence of treatment was significantly higher on the dental hygienists' records (91 per cent) than on the dentists' (42 per cent).

The evaluation of the independent dental hygiene practices in Colorado (Astroth and Cross-Poline 1998) used similar structure and process criteria as proxies for patient harm but without any assessments of dental practice. The Colorado levels of acceptability were reported to be similar but sometimes slightly lower than those found in California. The conclusions about patient harm in California and Colorado were also very similar: "... the evidence indicates that independent dental hygienist practice did not increase the risk to the health and safety of the public or pose undue risk of harm to the public" (Freed *et al.* 1997).

Unlike the preceding process criteria that may be considered as proxies for potential harm in a patient-safety sense, the clinical care process criteria that were also analyzed by Freed *et al.* (1997) may very subtly and indirectly be proxies for potential harm to patients in a quality sense. The patient records indicated that the dental hygienists provided a significantly more acceptable performance than the dental practices (by dentists or dental hygienists) for several of the clinical criteria that were assessed. These significant differences were found in the evaluation of periodontal status, the assessment of the soft tissues of the oral cavity, and

the quality of the bitewing radiographs. In none of the remaining process criteria that were evaluated did the percent acceptability of the dental practice criteria exceed that of the hygienists (Freed *et al.* 1997).

In reviewing the need for the order requirement from dentists before dental hygienists undertake tooth scaling, root planing, and curettage, the Health Professions Regulatory Advisory Council (HPRAC) of Ontario asked two very relevant questions about patient harm (Ontario 1996):

1. What is the risk of harm in allowing hygienists to self-initiate procedures?
2. Is the training to perform (the above acts) sufficient for self-initiation?

Having found that there was no evidence of harm to patients and having considered the arguments on both sides of the issue, HPRAC recommended in its report that the order requirement be eliminated and that the College of Dental Hygienists of Ontario develop appropriate regulations and practice guidelines. Although the Minister of Health subsequently rejected this recommendation, the rejection was not based on evidence of patient harm.

CONCLUSIONS

Demographic and disease changes will especially increase the public's need for the kinds of preventive and health promotional dental services primarily provided by dental hygienists.

Despite lingering problems in the amount and type of data available to provide high-quality evidence about the benefits or deficiencies of unsupervised dental hygiene practice, sufficient information is documented in this review to reach the following conclusions:

1. Unsupervised dental hygiene care in non-traditional practice settings in Ontario will increase public access, and particularly the access by special groups such as the institutionalized elderly, both to preventive dental hygiene care and, by increased referrals, to dentists' therapeutic care when needed.
2. Unsupervised dental hygiene care in non-traditional practice settings in Ontario can be provided at lower cost than the same care provided in supervised dental practices.
3. Unsupervised dental hygiene practice will not increase risk to the health of the public or pose undue harm to the patients of dental hygienists in these practices.

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Achieving Change through Planned Political Action: Dental Hygiene Baccalaureate Education in Alberta

by Sharon M. Compton, DipDH, MA(Ed), University of Alberta; Judy A. Clarke, DipDH, Private practice; Sandra J. Cobban, DipDH, MDE, University of Alberta; Eunice M. Edgington, DipDH, BScD, MA(Ed), University of Alberta; Stacey Mackie, DipDH, Private practice; Margaret P. Wilson, DipDH, MEd, University of Alberta

ABSTRACT

The University of Alberta became the first institution in Canada to offer a full-time, direct-entry Bachelor of Science degree with specialization in Dental Hygiene on March 24, 2000. This achievement can be attributed to the collective efforts of several groups and individuals. This paper outlines the activities of a grassroots lobbying group, its many component working groups, and the Framework for Planned Change that guided their actions. Each working group, its responsibilities, and activities are briefly described. Key factors that contributed to the successful achievement of the goal are discussed. This document provides a useful example of the application of a planned approach to change and the incorporation of political action into the process.

Keywords: dental hygiene, baccalaureate education, planned change, political action, bachelor degree

ABRÉGÉ

Le 24 mars 2000, l'Université de l'Alberta est devenue la première institution au Canada à offrir un baccalauréat en sciences à plein temps, auquel on peut s'inscrire directement, avec spécialisation en hygiène dentaire. Cette réalisation est attribuable aux efforts collectifs de plusieurs groupes et particuliers. Le texte décrit les activités d'un groupe de lobbying de la base, les nombreux groupes de travail qui le composaient et le cadre de changement planifié qui a guidé leur action. On décrit chacun des groupes de travail, ses responsabilités et ses activités. Les facteurs clés qui ont contribué à ce succès y font l'objet d'une discussion. Ce document donne un exemple utile de l'application d'une approche planifiée au changement et à l'intégration de l'action politique dans le processus.

INTRODUCTION

The University of Alberta became the first institution in Canada to offer a full-time, direct-entry Bachelor of Science degree with a specialization in Dental Hygiene on March 24, 2000. This achievement can be attributed to the collective efforts of a grassroots dental hygiene lobbying group, the Alberta Dental Hygienists' Association (ADHA), and the Director of the Dental Hygiene Program. This paper outlines the activities of the grassroots lobbying group and provides insight into the Framework for Planned Change that was used to successfully reach the goal of achieving a baccalaureate degree.

The granting of a dental hygiene degree at the University of Alberta was not realized for 26 years despite supporting documentation indicating the value of undergraduate baccalaureate education for dental hygiene (CDHA 1998; Nielsen-Thompson and Brine 1997; Brand 1994; DeVore 1993; Paarmann *et al.* 1990; Health and Welfare Canada 1988; Gluch-Scranton and Rigolizzo Gurenlian 1985; Mescher 1984). The implementation of the direct-entry baccalaureate dental hygiene program resulted from planned political action and the determination of a group of committed individuals.

INITIATION OF THE BACCALAUREATE STRATEGY COMMITTEE

On April 25, 1997, dental hygiene volunteers came together to develop a strategy for achieving baccalaureate dental hygiene education in Alberta. The group hereafter will be referred to as the Strategy Committee. Dr. Ginette Rodger was retained as a political strategist to lead the political action process.

The first task of the Strategy Committee was to formulate a central goal for the ensuing political action process. Two options discussed by the Strategy Committee were either to

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pursue recognition of the existing Dental Hygiene Program with degree status, or to seek a baccalaureate degree with an extended program of study equalling eight academic terms rather than the current seven. The Committee unanimously agreed that the entire political action process would focus on obtaining degree status for the existing program, as it comprised course credits comparable to other degree-granting health science programs on campus.

The Strategy Committee believed that seeking recognition for the current program would be the route of least resistance. More funding would be required if the implementation of a dental hygiene degree involved increased curriculum hours. In view of the financial restraints at the Department of Dentistry, the Strategy Committee thought the strongest counter-argument from the administration would be the lack of available funding. Therefore, the Strategy Committee agreed that seeking fairness and justice for the existing dental hygiene program would be the strongest line of reasoning for a successful political action process. Consequently, the Committee declared that "it was time" for the University of Alberta to justly recognize dental hygiene education as a baccalaureate degree rather than as the existing diploma.

The goal was defined: "To implement a Baccalaureate Degree in Dental Hygiene at the University of Alberta." Henceforth, the Strategy Committee, led by Dr. Rodger, began the political action process for change after choosing the mandate to end the injustice to dental hygiene graduates.

PROCESS OF CHANGE

To accomplish change, the Strategy Committee needed a planned and purposeful process. Skelton-Green (1999) describes three types of change: developmental, spontaneous, and carefully planned. Developmental change occurs as a result of growth within an institution or organization where growth creates the unavoidable change. Spontaneous change is often referred to as reaction and typically is unexpected. In carefully planned change, a goal is set after recognizing the deficiencies in the current state, and an action plan implemented to achieve the goal. The process of action followed by the Strategy Committee would be considered "carefully planned" change. To enable the Strategy Committee to effect this planned change, Dr. Rodger introduced a framework (Figure 1) that was used successfully by nurses (Rodger 1999; Trojan *et al.* 1996).

FRAMEWORK FOR PLANNED CHANGE

Defining a clear objective or goal is the first step in the framework for planned change; a clear focus is fundamental to a successful planned change process. Keresty *et al.* (1998), political strategists, stressed the importance of deciding on one clear focus. With a clearly defined focus, it is easier to see results and this encourages and motivates the committee participants to continue working toward the desired change. Similarly, Rodger (1999) emphasized the significance of identifying one clear goal or objective at the initiation of the project; this is represented in Figure 1.

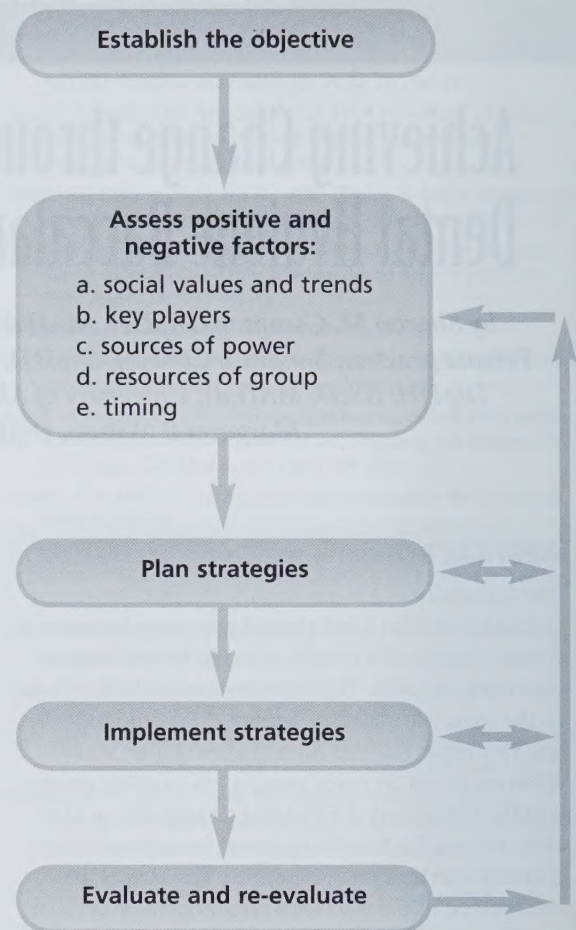


Figure 1. Framework for planned change (adapted from Rodger 1999; Trojan *et al.* 1996)

The second step is to assess the positive and negative factors in the environment where the change is to occur or, in other words, to perform an environmental scan. For this environmental scan, Trojan *et al.* (1996) describe areas that need to be addressed and questioned:

1. What are the social values and trends that may align with or hinder the efforts? What aspects of the current social agenda and political climate can become useful venues for discussing the objective?
2. Who are the key players (individuals or groups) who can influence the achievement of the goal?
3. What sources of power will the key players use to support or impede the goal?
4. What resources can the group mobilize to maximize their strengths, minimize their limitations, and achieve the most effective results?
5. How does the current social climate favor the timing of this lobby? What are the specific political moments that might be used to achieve the objective? (p 76)

The third step in the framework for planned change is planning the action strategies. By allowing significant time and discussion for the first two steps, the Strategy Committee was able to plan effective strategies for achieving the desired change. It is important to note that this critical analysis must be done before planning the action strategies.

The fourth step in the framework is implementing the various strategies. Throughout implementation, the environmental factors were assessed and re-assessed at each Strategy Committee meeting. Feedback loops in Figure 1 illustrate how the committee would continue to re-visit previous steps and adjust plans or actions as necessary. The outcomes of actions strategies were constantly evaluated and re-evaluated. Many modifications to the action plan and strategies occurred throughout the process. All members were invited to share any information or events they believed were relevant to the attainment of the goal.

Outside of this framework for planned change, the Strategy Committee was guided by Dr. Rodger's stoic commitment to achieving the desired change. She declared, "We will not quit until the goal is achieved"—a baccalaureate degree for the dental hygiene program.

POLITICAL STRATEGIST AND PROJECT COORDINATOR

In any political action campaign, a political strategist and a project coordinator are critical. The role of political strategist can be conceptualized as someone able to facilitate the change process using a collaborative and participative approach through persuasion (not orders), team building, seeking input, sensitivity to the interests and priorities of others, and sharing rewards and recognition (Kanter 1983). The strategist who operates from this conceptual framework empowers rather than inhibits members as change is pursued.

Dr. Rodger, a political strategist, facilitated the initiative. A volunteer dental hygienist was selected by the strategist to be the project coordinator.

As consultant, guide, and mentor, the strategist was fundamental to the total lobbying effort and responsible for managing the action plan. With a process focus, the strategist led each meeting of the overall Strategy Committee, reviewing activities and external events, mapping the next action steps.

The project coordinator, who should have effective interpersonal and organizational skills, was responsible for organizing and documenting the activities of each Strategy Committee meeting. In addition to working closely with the strategist, the coordinator was the central figure for communications with all members of the committee.

IDENTIFICATION OF WORKING GROUPS

Working groups, each with a specific mandate, were formed from the Strategy Committee to accomplish the many diverse tasks arising from this project. These groups were as follows:

- Message
- Health Professions
- Dental Hygiene Students
- Media
- Parents of past and present dental hygiene students
- Issues
- University
- Government
- Writers

GUIDING PRINCIPLES AND STRATEGIES FOR WORKING GROUPS

Several guiding principles (Rodger 1997) set the stage for cohesive action by the groups and members:

1. Do not take any initiative forward before it has been planned and approved by the Strategy Committee.
2. Always inform the strategist of any issue that could have a direct or indirect bearing on the goal.
3. Always give careful thought to the impact of external events and their potential effect on the goal.
4. Do not be distracted by "side issues" that do not affect the goal. Maintain focus.
5. Maintain the delivery of a consistent message that "conveys the value of the endeavour." Communicate with a unified voice.

OVERVIEW OF WORKING GROUPS

The need for action from each group depended upon timing and the development of issues throughout the entire political action process. Although all groups were equally important, there were times when one group went into action while the others waited in the wings until needed.

A. Message Group

Immediately after the initial April 25, 1997 strategy workshop, the Message Group was given the mandate to create a one-page message (Alberta Dental Hygienists' Association, in press) explaining the goal of the Strategy Committee. This message outlined the prevailing issue(s) logically and briefly so uninformed readers could easily understand the facts behind the initiative and the ultimate goal being sought. The message was a key reference document distributed to individuals and organizations that were contacted to gain support for the dental hygiene degree initiative.

The importance of the message cannot be overstated. It was imperative for the political action process that the issues and statement of the goal be clearly and succinctly defined. For this reason, the message was developed at the beginning of the political action process.

B. Issues Group

The Issues Group prepared background documentation that considered key positive and negative factors that had been identified during the initial brainstorming. The members of the Issues Group reviewed the literature and prepared a discussion paper on each issue. Each issue was introduced as a question and its corresponding discussion paper formed the response to the question. Each discussion paper was brought to the overall Strategy Committee for review, comment, and subsequent revision. The purpose of

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Local Anaesthesia and Pain Control with Dr. Daniel Haas

Review of pharmacological and technical considerations of local anaesthesia and pain control. Alternative techniques and the use of nitrous oxide will be discussed.

Oral Surgery for General Practitioners with Dr. Meredith August

Update your knowledge of the head and neck examination, oral manifestations of systemic diseases, and recognition of premalignant and frankly malignant processes. Antibiotic use, TMJ disorders, and orofacial infections will be discussed.

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Dr. Faith B. Collins, Program Director
Health Sciences Programs
Division of Continuing Studies, University of Victoria
PO Box 3030 STN CSC, Victoria BC V8W 3N6
Phone (250) 721-8453 / Fax (250) 721-8774
E-mail fcollins@uvcs.uvic.ca

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these discussion papers was to provide accurate background information to ensure that all Strategy Committee members had a thorough and accurate level of understanding and preparation.

Initially, 10 major issues were identified. As the political process unfolded, new issues arose. Overall, 19 issues were identified. These were compiled into the Issues Document (Alberta Dental Hygienists' Association, in press) that was a valuable resource document for members of the overall Strategy Committee.

C. Health Professions Group

The Health Professions Group was formed to seek support from other health professions in Alberta. In total, 16 health professions were identified and targeted for visits. Two dental hygienists, one from private practice and one a dental hygiene educator, were selected to conduct in-person visits to each office. The decision to have the same two representatives ensured that a consistent message was delivered to all professional associations and resulted in consistent feedback to the Strategy Committee.

The majority of professional associations were visited during a one-month period. All of the associations agreed to take the above-mentioned message to their respective council or board to request a letter of support for the dental hygiene degree. Given the degree of political tension with the prime stakeholder associations (medicine and dentistry), these meetings were not scheduled until the Strategy Committee and the strategist decided on the appropriate timing.

D. University Group

The University Group was composed of dental hygiene educators. The directives for this working group were to (a) identify key individuals or groups within the University of Alberta who were in a position to influence the achievement of the goal; (b) meet with the identified individuals and/or groups to inform them of our goal and seek their support; (c) act as liaison and guide for the dental hygiene students as they moved the message to key groups within the university; and (d) research the history of previous baccalaureate proposals for dental hygiene education at the University of Alberta.

The University Group identified the following individuals and groups: Administrative Deans and Associate Deans of the Faculty of Medicine and Dentistry, administrative officials of the University of Alberta, deans and chairpersons of all health-science-related faculties and departments, the Academic Women's Association, the Women in Scholarship Engineering Science and Technology (WISEST) group, and members of the Board of Governors and the Senate of the University of Alberta.

The University Group also kept the dental hygiene clinical instructors informed of the progress of the project and any pertinent issues.

E. Dental Hygiene Student Group

The Dental Hygiene Student Group was responsible for meeting with the various student associations at the University of Alberta. Particular emphasis was placed on groups deemed critical to the achievement of the goal. These included the President of the Student's Union and students who were voting members of the General Faculty Council of the University. In keeping with the guiding principles and strategies for working groups, two students always participated in any scheduled meetings. In addition to informing the various representatives of the central goal and providing them with the message document, the students answered questions, asked for feedback, and requested written letters of support.

The dental hygiene students met with the Dean and selected Associate Deans of the Faculty of Medicine and Dentistry. The students also arranged an information-sharing forum for both classes of dental hygiene students with the Dean of the Faculty of Medicine and Dentistry and Associate Dean of Dentistry in attendance.

F. Parents Group

The Parents Group included parents of current dental hygiene students and recent graduates of the Dental Hygiene Program. These people rallied together under the direction of a small number of motivated parents. They organized a letter writing and telephone campaign and planned visits to specific individuals who were recognized as important to achieving the goal—recognition for dental hygiene education. Their campaign was structured to have a continuous number of people writing letters and making telephone calls each month, in order to maintain constant pressure on the university administrators.

G. Government Group

The Government Group was activated in the fall of 1999 when it became necessary for the Baccalaureate Strategy Committee to increase external pressure on the university administration by contacting elected government officials or Members of the Legislative Assembly (MLAs). The Government Group formed a liaison with the Political Action Committee (PAC) of the Alberta Dental Hygienists' Association via a teleconference. Following the teleconference, information packages were developed and distributed to grassroots dental hygienists who volunteered to speak to their local MLAs about the goal. Both the Parent and Student Groups joined with the members of the Government Group and contacted their respective government representatives.

H. Media Group

Media advocacy would have been used if the degree initiative became unduly stalled. The purpose of the group's activities was to inform the public, influence those in positions of power, and to put pressure on decision makers.

The Media Group was formed in the final months of the political action process but was not activated. The group's mandate was to plan a press conference including identify-

ing media contacts and developing a press kit. During the preliminary planning stages of this group, the dental hygiene degree was approved for implementation so no further action was necessary.

I. Writers Group

The Writers Group was established at the last meeting of the Strategy Committee, following the announcement of approval of the degree. The mandate of the group was to document, for publication, the activities of the Strategy Committee. In addition to providing a chronology of the committee's activities and of the framework for planned change, the papers would become an archival record of the achievement of a Bachelor of Science Degree with specialization in Dental Hygiene at the University of Alberta.

GUIDELINES FOR MEETINGS WITH EXTERNAL GROUPS

There were many occasions when members of the working groups met with outside groups and agencies to educate and seek support for the project. To ensure consistency, all members used the following guidelines:

1. Two representatives from the working group will always participate in the meeting(s). This is to support each other and also to ensure accurate recollection of the discussion and the final outcome.
2. Advance preparation for the meeting is essential. This includes brainstorming possible questions that may be asked of the members and formulating responses to the queries. It is also important to have background knowledge of who will be participating in the meeting, what position they hold, and any other pertinent information. (The Issues Document was an important resource for this step.)
3. Distribute a copy of the Message prior to the meeting if possible. If not, always leave a copy following the meeting.
4. Always state the purpose of the visit at the beginning of the meeting. At the conclusion of the meeting, ask for a letter of support if it is appropriate.
5. Immediately following the meeting, representatives debrief and prepare a written summary. If the meeting yields something of importance that could affect the project, the strategist should be contacted immediately.
6. A summary report is to be presented to the Strategy Committee at its next meeting.

EX-OFFICIO MEMBERS OF THE OVERALL STRATEGY COMMITTEE

Ex-officio members of the Strategy Committee included the Director of the University of Alberta's Dental Hygiene Program and representatives from the Alberta Dental Hygienist's Association (ADHA). The ADHA provided time, expertise, and staff resources for the Strategy Committee as well as allocating funds to hire the strategist. To further demonstrate their commitment to the degree implementation, the ADHA pledged funds to the university

to supplement the first four years of implementation of the dental hygiene baccalaureate program.

A member of the ADHA Council and the Executive Director represented the Alberta Dental Hygienists' Association at the Strategy Committee meetings. The council representative participated on the Strategy Committee and reported the events to the ADHA Council. The Executive Director provided insight from a dental hygiene membership perspective and from other communications with key individuals or groups. The ADHA was identified as a positive "key group" (see Figure 1) for the achievement of the goal.

At the same time that the Strategy Committee was pursuing recognition for the existing Dental Hygiene Program, the Director of the Dental Hygiene Program was putting forward a proposal for a Bachelor of Science, Dental Hygiene Specialization. The director attended Strategy Committee meetings and provided progress reports of the program's degree proposal through the various levels of the approval process. This information assisted the Strategy Committee in understanding the political atmosphere within the university in general and, more specifically, within the Faculty of Medicine and Dentistry. The Director of the Dental Hygiene Program was considered a "key individual" (see Figure 1) who influenced positively the achievement of the designated goal.

KEY FACTORS FOR SUCCESS

After a review of the project and the planned political process employed, it was apparent that the goal would not have been achieved without the following key factors:

1. The guidance of a knowledgeable strategist who was familiar with political action and the issues surrounding a predominately female health profession;
2. The understanding of past struggles and the failure to implement a baccalaureate degree at the University of Alberta;
3. The actions of the Strategy Committee intentionally coinciding with the Dental Hygiene Program's proposal as it proceeded through the various administrative levels within the university;
4. The Parent Group's critical role in the success of the initiative; the parents rallied with strength and determination in their never-ending telephone calls, letter writing, and meetings with targeted groups and individuals;
5. The unified voice of students that was essential; interest in the goal and issues of the Strategy Committee increased as the student voice grew and was heard throughout the university campus;
6. Group solidarity and the continuous re-commitment to the goal, declaring **never to quit** until the goal was achieved; this provided strength and encouragement to the members as the journey sometimes felt overwhelming;

7. A large dedicated group of volunteers. This cannot be overestimated; over 60 volunteers including students, parents, educators, and grassroots dental hygienists worked tirelessly for almost three years. The effort of these individuals was an absolute necessity;
8. The consistent delivery of the message that was a critical determinant of the successful outcome;
9. Timing of events that was carefully considered and required continual assessment and strategic planning.

It often was discouraging when roadblocks would arise, forcing the group to make adjustments to the action plan. However, consistent use of the framework for planned change allowed the action to go forward in a thoughtful and cohesive fashion.

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¹D. Kandelman and D. Gagnon, Journal of Dental Research 69 (11): 1771-1775, 1990.

²Birkhead D. Cariologic aspects of Xylitol and its use in chewing gum: a review. Acta Odontol Scand 52: 116-127, 1994.

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Program Outline

12th Annual Professional Conference

Mississauga Living Arts Centre
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2001 *September 21-23*
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genesis 

PRE-CONFERENCE

Niagara Region Wine Tour
(if numbers permit)

FRIDAY, SEPTEMBER 21ST

Mississauga Living Arts Centre

- Opening Ceremonies
- Keynote Speaker: Ellie Rubin, "Entrepreneur"—Secret Recipes for a Disordered World
- 3M ESPE/CDHA President's Reception

SATURDAY, SEPTEMBER 22ND

Delta Meadowvale Resort and Conference Centre

EDUCATION

- Baccalaureate Education for Dental Hygienists
- CDHA Education Task Force
- Long Distance Learning: A Way of the Future
- Bonnie Craig, RDH, MSc. Director, University of British Columbia Dental Hygiene Degree Completion Program

REGULATIONS

- Dental Hygiene: Evolution, Not Revolution
- Fran Richardson, RDH, BScD, MSc. Registrar, College of Dental Hygienists of Ontario

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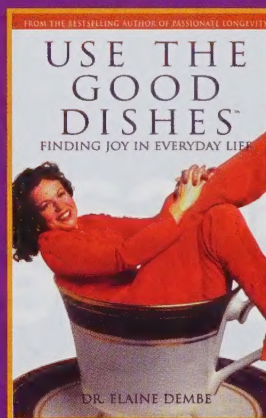
CLINICAL PRACTICE

- Self-Employment Issues for Dental Hygienists
- Canada Customs and Revenue Agency
- Periodontal Medicine
- Salme Lavigne, RDH, MS(DH). Professor and Director, School of Dental Hygiene, University of Manitoba
- Implants in the Esthetic Zone
- Leanne Carlson-Mann, RDH
- Why Do We Give Antibiotics to People with Heart Murmurs and Other Lies
- Dr. Andrew Morris, MD, MSc(Epid), FRCPC. Infectious Diseases and General Internal Medicine, Mount Sinai Hospital/University Health Network, Toronto
- Forensic Dentistry: Swissair 111 Investigation
- Master Corporal Marty Raymond, CDA, NDAEB
- Craniofacial Surgery: Making a Difference
- Dr. John Phillips, MD, FRCSC. Centre for Craniofacial Care, Hospital for Sick Children, Toronto
- Legal Obligations and Ethical Dilemmas in Practice
- Joyce Weinman, RDH, LLB
- Fluoride Needs Assessment: Taking the Mystery Out of Adult Fluoride Therapy (sponsored by Oral-B)
- Amy Hazlewood, RDH, BS
- Freedom to practise...the full scope
- Lynn Cappel, RDH
- All Clefts Great and Small
- Dale Scanlan, RDH
- Vital Tooth Bleaching: At-Home Technique
- Dr. Laura Tam, DDS, MSc. Associate Professor, Restorative Dentistry, Faculty of Dentistry, University of Toronto

Keynote Speakers

Ellie Rubin, author of no. 1 national best seller, *Bulldog-Spirit of the New Entrepreneur*, international speaker and co-founder of the Bulldog Group has become the authoritative blueprint for the ambitious. No matter what business you are in, Ellie provides her audiences with the skills, mindset, and attitude necessary to thrive in today's rapidly changing business climate. You will leave Ellie's presentation with the inspiration and enthusiasm to create your own roadmap to "Success".

Dr. Elaine Dembe is one of Canada's outstanding authorities on longevity, stress management, and motivation. A celebrated chiropractor, writer, sought-after speaker, and marathon runner, she has helped thousands of people work out their kinks and feel better—both mentally and physically. Dr. Dembe's passion for living life to the fullest is sure to rub off on us all and lead us to a life of Passionate Longevity.



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- Oral Health Care for Special Needs Patients
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- Dealing with Alzheimer's: Implications for Health Care Professionals
- Cheryl Graham. Education Coordinator, Alzheimers Society of Peel
- Theft by Trickery: Fraudulent and Abusive Dental Billing Practices
- Dr. Rick Beyers, DDS. Private practice and Mary Lou Oakes. Clarica
- Capturing That Picture Perfect Smile
- Rita Bauer. Medical Photographer, Faculty of Dentistry, University of Toronto
- Dental and Digital Photography
- Rita Bauer. Medical Photographer, Faculty of Dentistry, University of Toronto
- The Latest Research and Developments in Preventive Dentistry
- Dr. Hardy Limeback, DDS, PhD. Head, Discipline of Preventive Dentistry, Faculty of Dentistry, University of Toronto

- Dental Hygiene Practice—Working in Industry (sponsored by DENTSPLY)
- Angela Best
- Free Papers
- Short presentation by dental hygienists highlighting programs, research or other initiatives
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- Leslie Born, MSc, PhD candidate. Women's Health Concerns Clinic, St. Joseph's Hospital, Toronto
- Dietary Carbohydrates and Health: How Much and What Kind?
- Dr. Thomas Wolever, PhD. Professor, Department of Nutritional Sciences, University of Toronto
- The Natural Approach to Menopause and PMS
- Dr. Alvin Pettie, MD. Obstetrics/Gynecology
- When Smiles Turn to Wrinkles
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 - Networking to Improve Quality of Oral Care (Tamara Krievins, RDH, BScD);
 - Doing Research in Your Clinical Practice (Martha Clarke, RDH); and,
 - Hospital Experiences for Dental Hygiene Students (Kathleen Adams, RDH)

SATURDAY EVENING

- Trident Social Gala. Speakers: Sandra Shamus, author of *My Boyfriend's Back and There's Going to be Laundry*; plus The Evasons

SUNDAY, SEPTEMBER 23RD

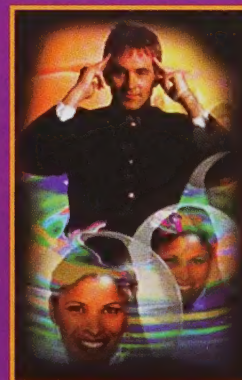
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- The Latest Research and Developments in Preventive Dentistry
- Dr. Hardy Limeback, DDS, PhD. Head, Discipline of Preventive Dentistry, Faculty of Dentistry, University of Toronto
- Perio and Implants: Assessment and maintenance (repeat)
- Leanne Carlson-Mann, RDH
- Community Connections
- Closing Ceremonies
- Dr. Elaine Dembe, author of *Passionate Longevity and Use the Good Dishes*

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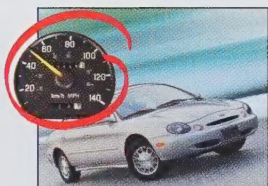


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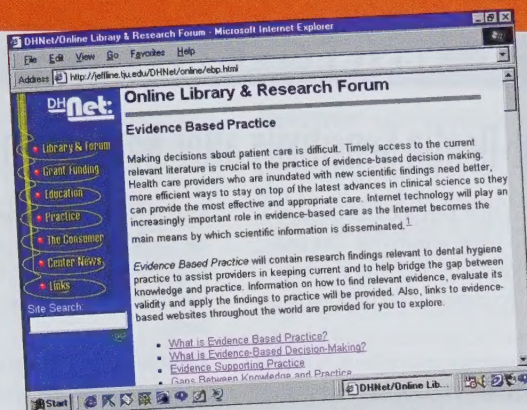
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by Karen Wolf, DipDH



It always amazes me how quickly the summer comes after our long winter. I hope you will all have time to enjoy our wonderful Canadian summer with friends, family, and fun enough to keep you going through the rest of the year.

As you read on, you will notice that I am devoting this article to a professional development topic. As professionals, we are obligated to apply what we know to our day-to-day practice. But first we have to be assured that what we have read or heard is true. I know most of you have heard the term "evidence-based." Well, the following two sites will set you well on your way to practising in an evidence-based fashion, which will increase your profile within your practice, with both the dental team and the clients.

Making decisions about patient care is difficult. Timely access to the current relevant literature is crucial to the practice of evidence-based decision making.... Internet technology will play an increasingly important role in evidence-based care as the Internet becomes the main means by which scientific information is disseminated.

This is a quote from the Online Library and Research Forum at the Thomas Jefferson University's DHNet regarding Evidence Based Practice (<http://jeffline.tju.edu/DHNet/online/ebp.html>). The various sections on the site are: What is evidence based practice? What is evidence based decision-making? Evidence supporting practice; Gaps between knowledge and practice; Links to evidence based sites; Evidence based courses/tutorials; Evidence based publications; Meetings and conferences; and References.

At the Institute of Health Sciences in Oxford, England, there is the Centre for Evidence-Based Dentistry (www.ihs.ox.ac.uk/cebd/). The goal of this independent body is to "promote the teaching, learning, practice, and evaluation of evidence-based dentistry." At the home page, you will find these sections: About the Centre; Contact Information; Evidence-based tools; Evidence-based Dentistry Journal; Evidence-based Links; Forthcoming events; Dental Links; Medical Links; and Other Links.

For those of you who are interested in this topic, want to use journals and research to enhance your professionalism, but need to know how to get started, I have two areas within this site for you to visit and work through. From the home page of the Centre for Evidence-Based Dentistry, click on "Evidence-based Tools," and then "Critical Appraisal." Here you will find a vast amount of information at your fingertips. However, there are two areas of special interest: Trish Greenhalgh's series entitled "How to Read a

Paper" (*British Medical Journal* 1997) and the *JAMA Users' Guides* from the Canadian Centres for Health Excellence. JAMA recognizes the "... importance of quantitative overviews in providing bottom-line messages that are both clinically applicable and scientifically valid." Its guides cover such topics as: How to get

started; How to use primary studies; and How to use integrative studies. The Trish Greenhalgh series covers The Medline database; Getting your bearings (deciding what the paper is about); Papers that report drug trials; Papers that report on diagnostic or screening tests; and Papers that summarize other papers (systematic overviews and meta-analyses).

There is a great amount of information to digest and an equally difficult task to integrate this process into our practices. I hope that by using the Internet as a resource, and by knowing where to look for "clinically applicable and scientifically valid" information, you will improve your professional practice through evidence-based knowledge and decision making. Best of luck!

Until next time.

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Development of Root-Dentin Sensitivity after Nonsurgical Periodontal Treatment

Objective - Previous studies suggest that periodontal therapy may be an important cause of dentin hypersensitivity. The incidence and severity of root-dentin sensitivity (RDS) in a group of patients undergoing nonsurgical periodontal therapy were examined.

Methods - The study included 35 patients undergoing nonsurgical periodontal treatment for moderate to advanced disease. All patients required periodontal treatment in 2 or more quadrants, including at least 4 teeth with vital pulps. The subjects were all free of open caries lesions, had received no dental treatment within the last 3 months, and were not being treated for RDS. Using a 10-cm visual analog scale (VAS), the patients rated their pain response to a compressed air stimulus directed at the buccal surfaces before treatment, after 1 to 3 weeks after oral hygiene instruction, and again 1 to 4 weeks after subgingival scaling/root planing using hand and ultrasonic instruments, 1 quadrant per week.

Results - Mean VAS scores decreased with time only in those quadrants in which meticulous plaque control had been maintained. After instrumentation, VAS scores increased significantly, as did the percentage of patients recording higher mean VAS scores. In general, the increases in pain scores were moderate—just 9 patients reported an increase of more than 2 cm for at

least 3 teeth. The increase in pain scores was significantly greater for teeth showing any sensitivity at baseline. The intensity of RDS decreased as the 4-week follow-up period progressed, although there was no change in the percentage of sensitive teeth.

Conclusions - In patients with moderate to advanced periodontal disease, careful oral hygiene reduces problems with RDS. Hypersensitivity increases after scaling and root planing, although most of this pain is relatively minor. Severe RDS is not a frequent problem after instrumentation but is more common in initially sensitive teeth.

Clinical Significance - RDS problems will be diminished by meticulous plaque control. An increase in response to painful stimuli will result after scaling and root-planing procedures, but the pain experience is usually minor. Only a few patients had highly sensitive root surfaces after the use of instrumentation.

Tamarro S, Wennström JL, Bergenholtz G: Root-dentin sensitivity following non-surgical periodontal treatment. *J Clin Periodontol* 27:690–697, 2000

Reprints not available

Topical Antibiotic Therapy: A Useful Adjunct to Scaling and Root Planing?

Introduction - There is a growing emphasis on the use of locally applied antibiotics in periodontal practice. Previous studies have investigated the use of topically applied metronidazole 25% dental gel as an alternative to subgingival scaling. The effects of combining this form of topical antibiotic therapy with scaling and root planing were examined.

Methods - The randomized single-blind trial included 64 patients with adult periodontitis. Each patient had at least 2 sites per quadrant with probing depths of 5mm or greater; only these sites were treated. In a split-mouth design, scaling and root planing were performed in all quadrants, along with adjunctive application of metronidazole dental gel in 2 quadrants. The main outcome measure was the difference in probing depths at 259 days' follow-up.

Results - In all clinical parameters studied, both treatments yielded significant improvement. From pretreatment to follow-up, pocket probing depth improved from 6.00 to 4.63 in sites treated with metronidazole plus scaling and root planing and from 6.20 to 4.83 mm in sites with scaling and root planing alone. Bleeding of probing also improved, from 67% to 31% with metronidazole and 64% to 36% without. Adjunct metronidazole was associated with significant outcome improvements in previously untreated patients, particularly women. Dark-field

microscopy, performed in 45 patients, found a shift in the microflora toward healthier conditions, which was maintained longer in the combined-therapy group.

Discussion - In adult periodontitis, adding metronidazole 25% dental gel to scaling and root planing offers some improvement in outcomes. However, the clinical advantage of this improvement is questionable. Subgroup analysis suggests a greater response to adjunct metronidazole in previously untreated patients.

Clinical Significance - The findings question whether adjunct topical metronidazole application is worthwhile in patients with periodontitis, although the effects in previously untreated patients warrant further investigation.

Stelzel M, Florès-de-Jacoby L: Topical metronidazole application as an adjunct to scaling and root planing. *J Clin Periodontol* 27:447–452, 2000

Reprints available from M Stelzel, Dept of Periodontology, Dental Sch, Philipps Univ, Marburg, Georg-Voigt-Str 3, D-35039 Marburg, Germany. E-mail <stelzelm@mail.uni-marburg.de>; fax: +49 6421 286 3270

Evaluation and Classification of Halitosis: Practical Approach

Background - Halitosis is widely regarded as an oral condition, although systemic diseases may also cause bad breath. Halitosis may also be psychosomatic, and despite the lack of any oral malodor, some patients fear social consequences from bad breath. Proper management of this group is hindered by the lack of awareness of halitophobia. The authors propose diagnostic and treatment procedures based on the classification of genuine halitosis, pseudo-halitosis, and halitophobia.

Classification and Examination - Under the classification system of Miyazaki *et al.*, genuine halitosis is subclassified as physiologic or pathologic; the oral pathologic type is further subclassified as oral or extraoral. Patients with pseudo-halitosis or halitophobia complain of bad breath, but others are not aware of it. Pseudo-halitosis is effectively managed by explaining that the examination is normal and by counseling and simple treatments. Patients with halitophobia, in contrast, cannot be convinced that their breath is not malodorous. In clinical practice, halitosis is assessed by organoleptic measurement, that is, sniffing the patient's breath and scoring the level of odor. The patient exhales into a tube, which the examiner sniffs from the other side of a privacy screen. Oral malodor is assessed during the first second or 2; the examiner then takes his or her nose away for a few seconds, then sniffs again to assess the lung air. If even a slight malodor is detected, genuine halitosis is diagnosed. Otherwise, the diagnosis of pseudo-halitosis or halitophobia is made. The authors' breath-testing clinic assesses the patient's psychological status as part of a routine questionnaire.

Treatment - Physiologic halitosis is treated with cleaning, with special attention to the tongue. Other oral hygiene procedures and mouthrinsing may be used as well. Periodontal procedures may be required for patients with oral pathologic halitosis; patients with extraoral pathologic halitosis require medical referral. As described above, patients with pseudo-halitosis accept counseling and education. Those who do not accept this diagnosis should receive a diagnosis of halitophobia and be referred for psychological evaluation. If the patient does not accept this referral, they may be referred to their physicians, who should be informed of the diagnosis of halitophobia. The dentist should not argue with patients who believe they have oral malodor.

Discussion - The described classification and examination approach can aid in management of patients with halitosis. Correct management of the psychosomatic forms of halitosis will help to keep the condition from getting worse.

Clinical Significance - The authors present practical tips for the management of patients with halitosis. The article includes the questionnaire used by the authors at the breath-testing clinic.

Yaegaki K, Coin JM: Genuine halitosis, pseudo-halitosis, and halitophobia: Classification, diagnosis, and treatment. *Compend Contin Educ Dent* 21:880-889, 2000

Reprints not available

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Pink Teeth in Russian Dental Patients

Background - A growing number of immigrants are coming to the United States from Eastern Europe and Asia, where unfamiliar dental practices are followed. The author reports an unusual finding caused by 1 type of Russian endodontic therapy: pink teeth.

Observations - In affected patients, the dentin is stained a red or orange color, whereas the endodontic canals have been obturated with a soft, gutta-percha-like cement or a hard white cement. Reports from patients and Russian stomatologists sug-

gest that this red color results from the use of resorcinol as a filling material. Other causes of pink teeth are also possible, including pulp polyp, internal resorption, caries, and posttraumatic blood extravasation into the dentin. It is important to ensure proper diagnosis before treatment. Pink primary teeth may be left in place to await normal exfoliation. Pink permanent teeth will usually require endodontic retreatment before definitive restoration is attempted. When the hard white cement has been used, apicoectomy with retrofill may have to be used instead of conventional retreatment.

Discussion - Pink teeth, apparently resulting from overzealous use of resorcinol as a filling material, may be observed in Russian patients. It is important to correctly diagnose the cause of this finding.

Clinical Significance - Here is a clinical curiosity resulting from dental treatment in another part of the world. This article also points out that arsenic trioxide is sometimes used for pulp mortification in some Eastern European and Asian countries.

Matthews JD Jr: Pink teeth resulting from Russian endodontic therapy. *J Am Dent Assoc* 131:1598-1599, 2000

Reprints available from JD Matthews Jr, Ste B-2, Trinity Professional Plaza, 3500 Trinity Dr, Los Alamos, NM 87544 E-mail <jmattdent@aol.com>

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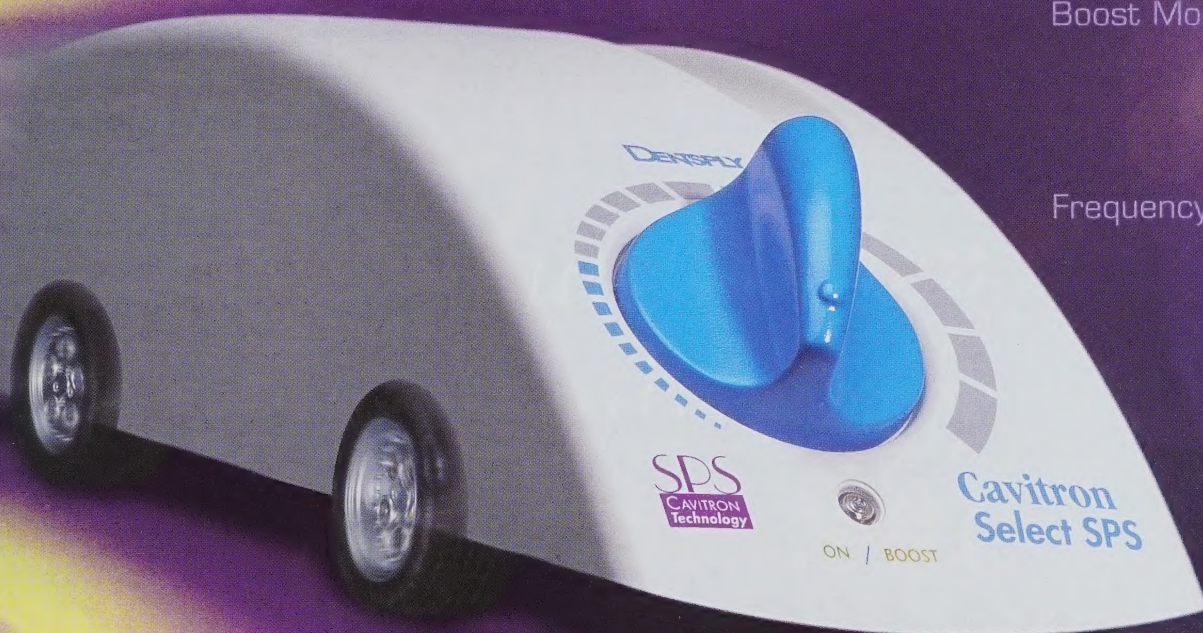
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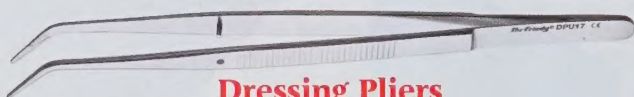
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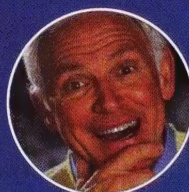


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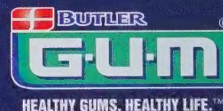
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PRESIDENT'S MESSAGE

LE MESSAGE DE LA PRÉSIDENTE

A Time to Reminisce

by Salme E. Lavigne,
RDH, BA, MS(DH)



It's thought-provoking to reflect on the evolution of our profession over the last 50 years. The clinical setting has certainly seen numerous changes, as have our treatment modalities. Did you know that, in 1951, dental hygienists in Canada were educated at only one place, the University of Toronto? Did you know that male students were not accepted into this program because dental hygiene was declared to be a "female profession"? Students had to wear a cap with vertical stripes indicating whether they were in first year or second year. In fact, the cap was created by the grandfather of dental hygiene, Dr. Alfred Fones of Bridgeport, Connecticut, who declared that dental hygienists should wear a cap to designate subservience! That would certainly be enough today to make us unwilling to wear caps—aside from the fact they are not aseptic and can be a source of cross-contamination!

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"A TIME TO REMINISCE" ... continued on page 170

Le temps du souvenir

par Salme E. Lavigne,
H.D., B.A., M.Sc.(H.D.)

L'évolution de notre profession au cours des 50 dernières années porte à la réflexion. Le milieu clinique a certainement traversé de nombreux changements, tout comme nos modes de traitement. Saviez-vous qu'en 1951, au Canada, il n'y avait qu'à l'Université de Toronto où l'on formait des hygiénistes dentaires? Saviez-vous que les étudiants de sexe masculin n'étaient pas acceptés à ce programme parce que l'hygiène dentaire était déclarée « profession féminine »? Les étudiantes devaient porter une coiffe rayée verticalement, indiquant qu'elles étaient en première ou en deuxième année. En fait, le grand-père de l'hygiène dentaire, le D^r Alfred Fones, de Birdgeport (Connecticut), concepteur de cette coiffe, avait déclaré que les hygiénistes dentaires devraient la porter comme signe d'un sous-service! Cela suffirait certainement, aujourd'hui, à notre refus de porter la coiffe - en plus du fait qu'elles ne sont pas aseptiques et qu'elles peuvent être une source de contamination croisée!

"LE TEMPS DU SOUVENIR"

... suite à la page 173

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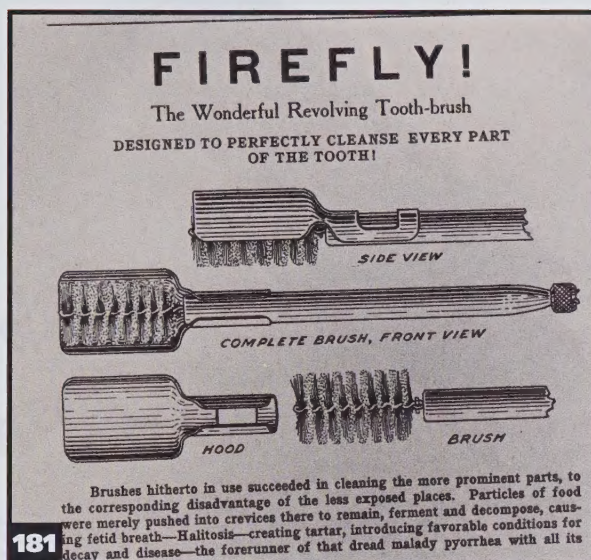
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CDHA Presidents 1963 to 2001

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1. Jain P, Vargas M, Denehy G, & Boyer D. *American Journal of Dentistry* Feb 1997; p.21.
2. Pashley DH. Proceedings of Symposium on Hypersensitive Dentin, The Dental Research Institute. 1985; p.65.
3. #1 Recommended sensitivity toothpaste by Dentists & Hygienists – Data on file, Block Drug Company (Canada) Ltd.

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by Karen Wolf, DipDH
- 198** Classifieds

NEW

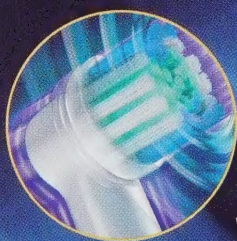
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1. Warren, PR et al. *Am J Dent* 2001;14:3-7. 2. van der Weijden, GA et al. *J Dent Res* 2001;80(Spec.Iss):119, Abstr.672.
3. Sharma, NC et al. *J Dent Res* 2001;80(Spec.Iss):548, Abstr.171. 4. Braun Oral-B 2001 Professional Use Test:
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EXECUTIVE DIRECTOR'S MESSAGE

MESSAGE DE LA DIRECTRICE GÉNÉRALE

Refresh, Restore, Move Forward

by Susan A. Ziebarth, CDHA,
Executive Director

To look backward for a while is to refresh the eye, to restore it, and to render it more fit for its prime function of looking forward.

—Margaret Fairless Barber

September is, for many people, a time for reflection and nostalgia but also a time to look forward to excitement and adventure. While treasuring the memories of summer and of school years past, we embark upon new adventures, whether academic, professional development, or personal interest.

This special Golden Anniversary issue of *Probe* is therefore published at the best time of year. We can reflect on and celebrate the proud history of dental hygiene as it emerges into its millennium role as the prevention profession. With the insight gained from this reflection, we can continue building the profession so that barriers to practice are removed and Canadians have access to high-quality dental hygiene services. To stimulate your thought processes, this commemorative issue of *Probe* looks at the profession's history and provides a glimpse of the profession through the eyes of the international grande dame of dental hygiene, Esther Wilkins.

CDHA has been thinking about the way in which it serves you, our members. Our strategic review has been completed with input from hundreds of individuals, our provincial associations, and other stakeholder groups. Thank you to all who took time to provide such thoughtful comments. The highlights of our findings will be published in CDHA's *Annual Report*, which will be sent to you with the next issue of *Probe*. In the meantime, we are moving forward and have been making, and will continue to make, changes to better meet your needs.

One of the first tangible changes you will see is the restructuring of our membership renewal campaign in most

REFRESH, RESTORE, MOVE FORWARD...
continued on page 170



Rafraîchir, restaurer, aller de l'avant

par Susan A. Ziebarth
Directrice générale de l'ACHD

Regarder derrière soi pendant un moment, c'est rafraîchir sa vision, la restaurer et la rendre plus apte à assumer sa fonction première, celle de regarder droit devant.

—Margaret Fairless Barber

Pour plusieurs, septembre représente un temps de réflexion et de nostalgie, mais aussi le moment de regarder vers l'avant, vers des choses palpitantes et vers l'aventure. À la fois, nous chérissons les souvenirs de l'été ainsi que les années d'études du passé, et nous sautons dans de nouvelles aventures, que ce soit sur le plan académique, en développement professionnel ou simplement par intérêt personnel.

Ce numéro Jubilé d'or spécial de *Probe* paraît donc au meilleur moment de l'année. En plus de célébrer, nous pouvons réfléchir sur la fière histoire de l'hygiène dentaire alors que celle-ci émerge dans son rôle de profession de la prévention pour ce millénaire. Grâce à la lucidité issue de cette réflexion, nous pouvons continuer à construire notre profession de façon à ce que les obstacles qui en entravent la pratique soient levés et que la population canadienne ait accès à des services d'hygiène dentaire de haute qualité. Pour stimuler vos processus de pensée, ce numéro commémoratif de *Probe* jette un coup d'œil sur l'histoire de la profession et donne un aperçu de cette dernière selon Esther Wilkins, la grande dame internationale de l'hygiène dentaire.

L'ACHD a réfléchi à la façon dont elle vous sert, vous, ses membres. Notre examen stratégique a été complété avec la participation de centaines de personnes, de nos associations provinciales et d'autres groupes d'intéressés. Merci à tous ceux et celles qui ont pris le temps de nous faire part de commentaires si bien réfléchis. Les points saillants de nos constatations seront publiés dans le *Rapport annuel* de l'ACHD, qui vous parviendra avec le prochain numéro de *Probe*. D'ici là, nous allons de l'avant; nous avons déjà effectué des changements pour mieux répondre à vos besoins et nous allons continuer de le faire.

RAFRAÎCHIR, RESTAURER, ALLER DE L'AVANT...
suite à la page 177

169

of numerous items other than metal instruments, which were either "heat sterilized" or autoclaved. But the most alarming difference is that gloves were worn only by oral surgeons, and then only when a patient was deemed infectious with diseases such as syphilis! Can you imagine doing initial periodontal therapy without gloves?! Furthermore, face masks, safety glasses, and long-sleeved apparel were unheard of. In fact, patients were routinely asked to remove their glasses as they were believed to interfere with treatment.

Today's practice is obviously very different. However, I was recently browsing through some early CDHA journals; that's when I grasped the extent of our evolution. At first I found the articles rather humorous but then realized that is the culture of dental hygiene that has really changed. We often refer to the "old boys' club" in jest. But when I read these journals, I was struck by the "ladies' club" attitude that prevailed in dental hygiene. For example, reports of social events with pictures of dental hygienists appearing in their hats and white gloves would read something like this:

The convention opened Wednesday evening with a registration party. Wine and cheese was followed by a most delightful variety concert. Registration continued Thursday morning at which time the girls received program information and their favourite kits. The surprises in each bag ranged from (would you believe) toothpaste to "Action" gum (*Canadian Dental Hygienist*, Fall 1970).

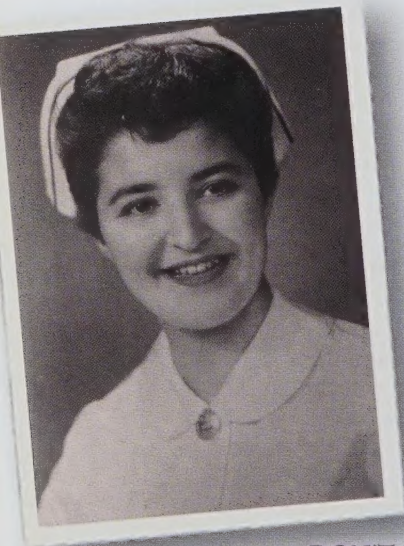
Any member mentioned in these journals was referred to as "Miss" or "Mrs." as were students in dental hygiene schools. This was, of course, the style of address years ago. However, it is noteworthy that reports of member activities always referred to dental hygienists as the "girls"!

Recruitment tactics used for association membership made an impression on me as well. Here's an excerpt from the February edition of the *Ontario Dental Hygienists Association Newsletter*:

Forget the hasty unkind words,
Forget the slander you have heard,
Forget the quarrel and the cause,
Forget the whole affair because,
Forget is the only way
To forget the storm of yesterday.
Forget the knocker and the sneak,
Forget the bad days of the week,
Forget you're not a millionaire,
Forget the gray streaks in your hair,
Forget to even get the blues, but

DON'T FORGET TO PAY YOUR DUES!

Deadline is March 1st, 1968.



These excerpts may appear as jokes to some of you, but these instances form part of the roots of our profession. This is when we can truly say, "We have evolved"!

Perhaps there is something to be said for the etiquette of the past—things were certainly a lot simpler then. But society has changed and so has the culture of dental hygiene. Look where we are now: there are 30 dental hygiene programs in the country; 92 per cent of us are self-regulated; we have our own national board exam; there are baccalaureate programs in dental hygiene; there are independent dental hygiene practitioners in parts of Canada. We can most definitely say, "We've come a long way, Baby"! As with all new professions, we still face many challenges, perhaps even an identity crisis. But these I consider to be our growing pains. I am confident that, by staying focused on the goal that has remained consistent over the past 50 years—improving the oral health of the public—we will come out as winners.

It has been a real pleasure serving you as your president in this, the golden year of dental hygiene in Canada. Thank you for your many kind letters and words of confidence. They have made my year most rewarding and memorable. As I turn over the leadership to Barb Gibb at the October Board meeting, I have full confidence that she will do an excellent job as your next leader.

HAPPY 50TH!! 🎉

REFRESH, RESTORE, MOVE FORWARD

(continued from page 169)

provinces.* Your membership renewal package is now personalized and will be mailed to you separately, not just included in the journal. And also this year, we are starting to ask you more about yourself so we can better represent you in national forums. The Board of CDHA wants to ensure your voice is one of the many forming the strong national voice and vision for Canadian dental hygienists. With this information, we will continue bringing together the wealth of knowledge that exists across the country. Provinces and individuals will be able to share information to help the profession maintain its evolutionary process and help remove some of our geographical and organizational barriers. Please take a few minutes to complete the application form. We will try to ensure that your time has been well spent and that the information gained will produce positive benefits for you in the coming year.

In closing, we hope you enjoy the 50th anniversary commemorative calendar that accompanies this journal and can use some of its ideas to celebrate your profession over the next 16 months.

Happy Anniversary! 🎉

* In Alberta and Saskatchewan, membership renewal campaigns are coordinated provincially.



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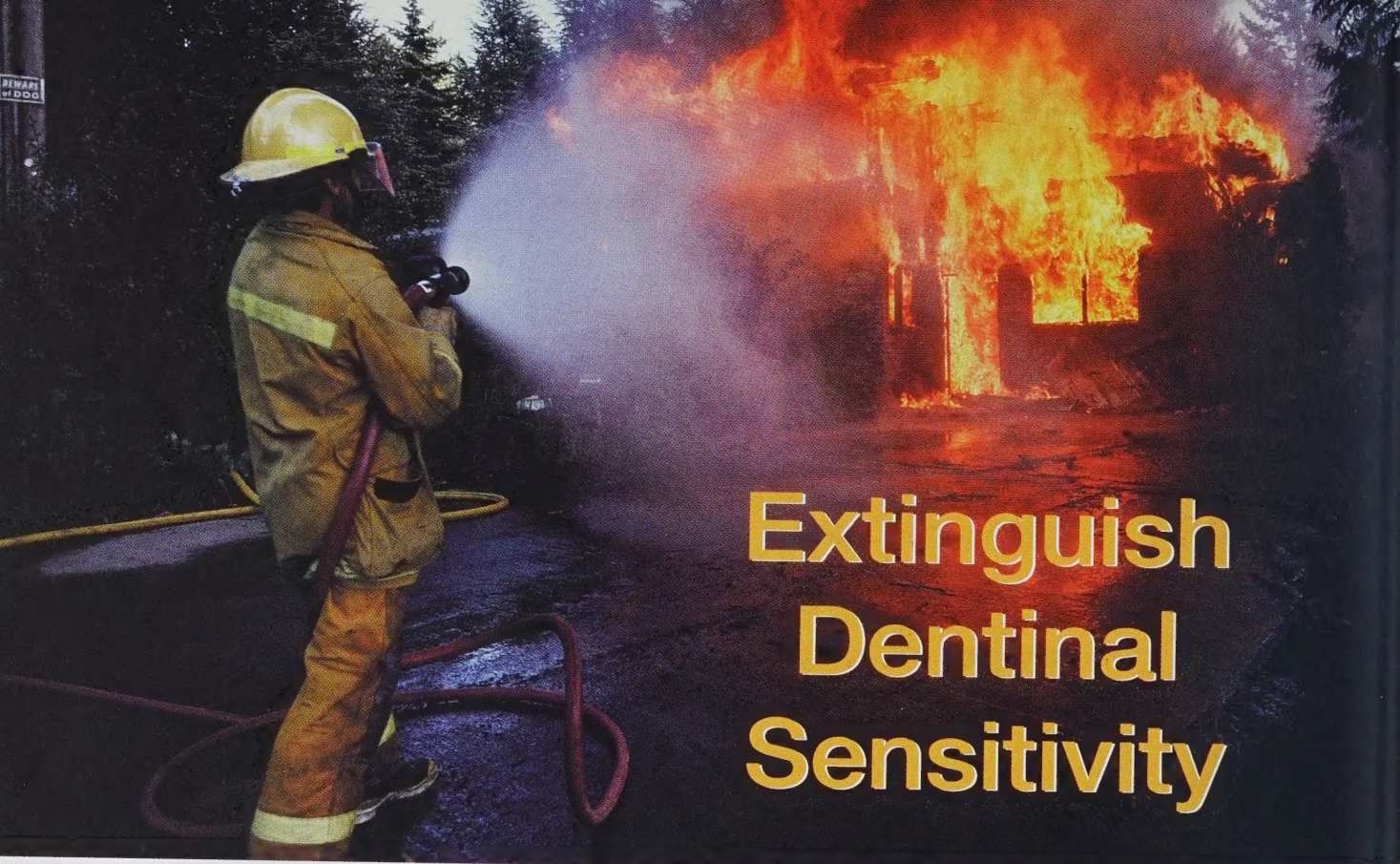
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On enseignait alors aux étudiantes en hygiène dentaire à pratiquer la « position debout », parce que les unités ne permettaient pas aux patients d'être étendus sur le dos. Cette pratique a amené, à coup sûr, les praticiennes de longue date à avoir des veines variqueuses. Le contrôle des infections consistait à « essuyer à fond » l'unité avec des carrés à l'alcool et à désinfecter à froid de nombreux articles autres que les instruments de métal, lesquels étaient soit « stérilisés à chaud », soit passés à l'autoclave. Mais la différence la plus inquiétante est la suivante : seuls les chirurgiens buccaux portaient des gants, et encore, seulement lorsqu'un patient était considéré infectieux, avec des maladies comme la syphilis! Pouvez-vous penser à faire une thérapie périodontique initiale sans porter de gants?! De plus, les masques faciaux, les verres de sécurité et les blouses à longues manches étaient choses inconnues. Effectivement, on demandait régulièrement aux patients d'enlever leurs lunettes qui, croyait-on, faisaient interférence au traitement.

La pratique d'aujourd'hui est évidemment très différente. Ainsi, comme je feuilletais récemment quelques-uns des premiers numéros des revues de l'ACHD, j'ai saisi l'étendue de notre évolution. Pour commencer, j'ai trouvé les articles plutôt humoristiques; mais j'ai ensuite réalisé que c'est la culture de l'hygiène dentaire qui a réellement changé. Nous faisons souvent référence au « club des dinosaures » pour plaisanter. Mais, en lisant ces revues, j'ai été frappée par l'attitude « club des dames » qui avait cours en hygiène dentaire. Par exemple, des reportages d'événements sociaux avec photos d'hygiénistes dentaires portant une coiffe et des gants blancs pourraient se lire comme suit :

Le congrès s'est ouvert mercredi soir par une soirée d'inscription. La réception vins et fromages fut suivie du plus agréable des concerts de variétés. L'inscription s'est poursuivie jeudi matin; les filles recevant alors les renseignements de programme et leur pochette d'information préférée. Les surprises cachées dans chacun des sacs allaient (le croiriez-vous) de la pâte dentifrice à la gomme à mâcher « Action » (*Canadian Dental Hygienist*, automne 1970).

Tous les membres auxquelles on faisait référence dans ces revues étaient appelées « Mlle » ou « Mme », comme l'étaient les étudiantes des écoles d'hygiène dentaire. Bien sûr, c'était la façon de s'adresser aux gens, il y a bien des années. Toutefois, il est remarquable que les articles sur les activités des membres référaient toujours aux hygiénistes dentaires comme étant les « filles »!

Les tactiques utilisées pour recruter les membres des associations m'ont, elles aussi, bien impressionnée. Voici un extrait du numéro de février 1968 de l'*Ontario Dental Hygienists Association Newsletter* (en rimes, dans le texte anglais – note du traducteur):

Oubliez les mots sévères lancés à la hâte,
Oubliez la calomnie que vous avez entendue,
Oubliez la querelle et sa cause,
Oubliez toute l'affaire parce que,
Oublier est la seule façon
D'oublier la tempête d'hier.
Oubliez talonneurs et importuns,
Oubliez les mauvais jours de la semaine,
Oubliez que vous n'êtes pas millionnaire,
Oubliez les mèches grises dans vos cheveux,
Oubliez même d'avoir le cafard, mais

N'oubliez pas de payer votre cotisation!

L'échéance est le 1er mars 1968.

Ces extraits peuvent sembler être des blagues pour certaines d'entre vous, mais ces cas-là forment une partie des racines de votre profession. C'est alors que nous pouvons vraiment dire : « Nous avons évolué! »

Peut-être y a-t-il quelque chose à dire de l'étiquette du passé - les choses étaient certainement beaucoup plus simples alors. Mais la société a changé et la culture de l'hygiène dentaire également. Regardez où nous en sommes maintenant : il y a 30 programmes de cours en hygiène dentaire au pays; 92 pour cent d'entre nous sont auto-réglementées ; nous avons notre propre bureau d'examen national; il y a des programmes de baccalauréat en hygiène dentaire; ainsi que des praticiennes indépendantes de l'hygiène dentaire dans certaines parties du Canada. Nous pouvons très définitivement dire : « Nous sommes venues de loin, *Baby!* ». Comme c'est le cas de toutes les nouvelles professions, nous avons encore de nombreux défis à relever, et, peut-être même, une crise d'identité à vivre. Mais ces étapes-là, je les considère comme nos difficultés de croissance. J'ai confiance qu'en gardant les yeux fixés sur le but qui est resté constant pendant les 50 dernières années, - celui d'améliorer la santé buccale du public -, nous sortirons gagnantes de l'épreuve.

Il m'a été vraiment agréable de vous servir en tant que présidente, cette année, celle du cinquantième anniversaire de l'hygiène dentaire au Canada. Merci des nombreuses lettres d'encouragement et d'appui. Elles ont rendu mon année des plus gratifiantes et mémorables. En cédant la direction à Barb Gibb, à la réunion d'octobre, j'ai pleinement confiance qu'elle fera un excellent travail comme votre prochain leader.

JOYEUX 50^e!!



June Board Meeting: Highlights

THE CDHA Board June 25, 2001

The internal strategic audit has been completed and changes in operational practice are currently being undertaken. Five areas will receive special attention: provincial relations; National Dental Hygiene Week and Dental Hygiene Awareness; implementation of a new membership database and membership renewal process; our web sites, both public and members-only; and finally sponsor relations.

The Board, concerned about the Canadian public being properly served by professional oral health care providers, has decided to develop a Consumer Bill of Rights at its fall workshop.

The slate of Board members was reviewed. Angela Yarnton from Saskatchewan and Karen Wolf from Nova Scotia will



This meeting was via teleconference.

be renewing their terms. Lynda McKeown's term as Past President is ending; with her departure, the number of members on next year's Board will be smaller by one. Kathleen Trites in New Brunswick will not be the NBDHA representative on the Board next term but New Brunswick has not yet nominated its new candidate.

Karen Wolf allowed her name to stand for the position of President Elect; she was nominated by Charlene Hamill. Karen's name will be on the slate of candidates at the Annual General Meeting in October.

All members of the Board are enthusiastic about attending September's Annual Professional Conference in Mississauga to meet and talk to CDHA members from across the country.

Finally, the Board was pleased to award Bonnie Craig with a Life Membership for her dedication to and leadership of the profession and CDHA.

History of Dental Hygiene Conferences

1960s

- 1964 June 29–July 1, Edmonton, **First annual convention of the CDHA**
- 1965 May 30–June 2, Quebec City
- 1966 June 14, 1966, Ottawa
- 1967 May 14–17, Toronto
- 1968 June 26–29, Vancouver
- 1969 July 8–11 Montreal

1970s

- 1970 June 30–July 4, Winnipeg
- 1971 September 30–October 2, Ottawa: "Dental Hygiene Faces the Challenge of Change"
- 1972 No conference
- 1973 October 14–17, Vancouver
- 1974 October 6–9, Toronto: "Spectrum '74: the Dimensions of Dental Hygiene"
- 1975 August 17–19, St. John's, Newfoundland
- 1976 September 12–13, Edmonton: "Collage '76"
- 1977 October 23–26, Toronto: "Transition 77: The Challenge of a Changing Career"
- 1978 September 10–13, Winnipeg: "Participate in '78"

- 1979 July 25–28, Vancouver: 7th International Symposium on Dental Hygiene: "Life-Long Learning"

1980s

- 1980 July 13–16, Halifax: "Learn & Relax in Halifax"
- 1981 August 30–September 2, Calgary: "Keep Abreast, Come to the West"
- 1982 May 9–12, Toronto
- 1983 September 25–28, Vancouver: "Conference on the Coast"
- 1984 April 10–11, Montreal: "Come One, Come All, to Montreal"
- 1985 September 29–October 2, Ottawa: "A Capital Place to Meet"
- 1986 August 24–27, Halifax
- 1987 No conference
- 1988 August 21–24, Edmonton: "Congregate in '88"
- 1989 June 28–July 1, Ottawa: "Dental Hygiene: Past, Present, Future"

1990s

- 1990 June 21–23, Winnipeg: "University of Manitoba School of Dental Hygiene 25th Anniversary – CDHA Professional Conference"

Cross-Canada Review of National Dental Hygiene Week™ Initiatives

This month we are highlighting dental hygiene awareness activities that were carried out in **Nova Scotia**.

In Nova Scotia, as the kickoff to National Dental Hygiene Week™ in autumn 2000, a group of dental hygienists entered the Run for the Cure race. The "Dental Hygiene Smilers" team led by Karen Flynn raised \$1,700 for breast cancer research.

The South Shore component of the **Nova Scotia Dental Hygienists Association** developed and presented mall displays. Sharon Taylor, Marcia Samson, Brenda Ziemer, and others focused on the topic of oral cancer and held a tooth-brush exchange. They advertised their event in dental offices, family support centres, newspapers, on radio, and gave away T-shirts as prizes.

Veronica Plowman McConaghy and others organized a dental hygiene continuing education day on Saturday, October 21, at the Grace Maternity Hospital. The topics discussed were care of dental implants, aging, infection control, breast cancer, and teeth whitening.

The second-year dental hygiene students at Dalhousie University also developed and presented displays in Halifax Regional Municipality shopping malls throughout the week. The displays promoted oral health and the profession of dental hygiene.

Thanks to Shannon O'Neill and Sharon A. Taylor of NSDHA for sharing their province's initiatives.

NSDHA

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- 1991 June 7-8, Moncton: "Future of Health Care – Health Promotion. How will it impact on you and your profession"
- 1992 June 6-8, Victoria: "New News for Older Smiles"
- 1993 October 15-17, Niagara Falls: "An Exploration into the Future." A North American Research Conference
- 1994 June 17-19, Saskatoon: "June in Saskatoon"
- 1995 June 23-25, Halifax, CDHA 6th Annual Professional Conference: "The Public, The Practitioner, The Profession"
- 1996 June 7-9, Calgary: "Interdependence and Independence: Striking a Balance"
- 1997 "Dental Hygienists: Professional Coast to Coast"
- 1998 June 19-21, Charlottetown: "Interdisciplinary Connections, Bridging the Gap"
- 1999 June 18-20, Winnipeg: "Professional Fitness Dental Hygiene Strides into the 21st Century"

2000s

- 2000 June 9-11, Victoria: "Partnerships in Health"
- 2001 September 21-23, Mississauga: "A Dental Hygiene Odyssey...Genesis"



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AquaFresh Student Hygienists Scholarship

- 1992 Susan Wdowiak, Dalhousie University
- 1992 Joanne Laventure, University of Alberta
- 1993 Cristy Cessford, University of Manitoba
- 1993 Natasha Kravtsov, University of Manitoba
- 1993 Paul Green, Confederation College
- 1994 Michele Ediger, Camosun College
- 1994 Dorthy Cairns, University of Manitoba
- 1995 Leonard Serfaty, University of Manitoba
- 1995 Steven Daniel Cameron, Dalhousie University
- 1996 Dean Lefebvre, Wascana Institute
- 1996 Nikki Stokes, Vancouver Community College

CDHA/Procter & Gamble Graduate Student Research Award

- 1992 Charla Lautar
- 1993 Lynda Mickelson (McKeown)
- 1994 Ellen Brownstone
- 1995 Joanne Clovis
- 1996 Laura Dempster
- 1997 Shafik Dharamsi
- 1998 Margaret Wilson

CDHA Dental Hygiene Research Grant Award

- 1995 Ellen Brownstone
- 1997 Joanne Clovis
- 2000 Eunice Edgington

CDHA Student Dental Hygienists Scholarship

- 1997 Mary Ann Klippenstein, University of Manitoba
- 1997 Marie Jaworski, University of Manitoba
- 1998 Dawn-Rai Kitt, Regina
- 1999 Sheila Petrollini

CDHA/Colgate Community Health Grant

- 1998 Sherry Saunderson
- 1999 Sharon Melanson
- 2000 Judy Lochhead
- 2001 Jane Waites

Oral-B/CDHA Graduate Student Research Award

- 2000 Louanne Keenan
- 2001 Alnar Altani (for master's degree)
- 2001 Sharon Compton (for doctoral degree)

Oral-B/CDHA Dental Hygiene Student Scholarship Award

- 2001 Ibtesam Issa, University of Alberta

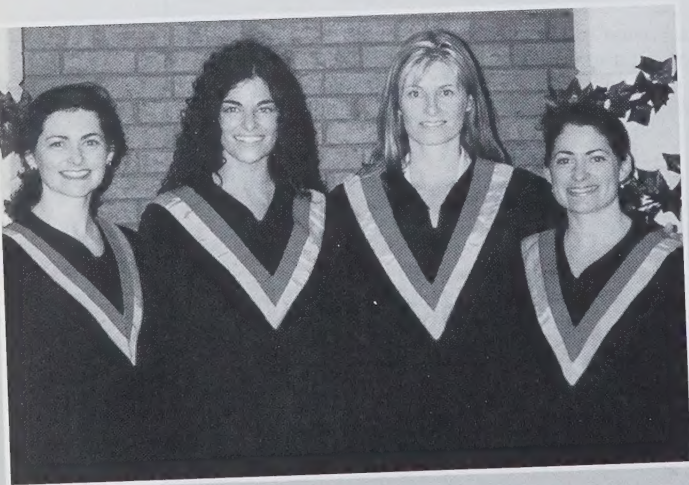
Distinguished Service Award

- Lucie Billette
- Debbie Daniels
- Sheryl Feller
- Marilyn Goulding
- Barbara Hewton
- Laura MacDonald
- Trudy McAvity
- Diane McCambly
- Sharyn Milroy
- Jeannie Orchard
- Mary Pelletier
- Nancy Prowse
- Fran Richardson
- Dale Scanlan
- Margaret Walsh

CDHA Life Members

- Sharon Amer (1983)
- Ellen Brownstone (1989)
- Joanne Clovis (1987)
- Bonnie Craig (2001)
- Marjorie Dimitri (1980)
- Sheryl Feller (1994)
- Marjorie Forgay (1978)
- Dianne Gallagher (1989)
- Jo Gardner (1975)
- Barbara Hewton (1998)
- Patricia Johnson (1977)
- Kate MacDonald (1983)
- Marg Miller (1981)
- Sharon Milroy (1997)
- Stephanie Nagle (1986)
- Audrey Penner Newcombe (1989)
- Fran Richardson (1999)
- Dale Scanlan (1989)
- Ailsa Wood (1980)
- Carol Matheson Worobey (1988)

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Left to right: Suzanne Carlson 1997, Monique Vezeau-Lyons 2001, Deborah Vezeau-Gauthier 2001, Brenda Patrick 1993

"Sisters are Doing it for Themselves"

The Alumni Association of Sudbury's Cambrian College of Applied Arts and Technology is honoured to feature the four Vezeau sisters who are proud graduates of the Dental Hygiene Program. A song by Annie Lennox of the Eurythmics, "Sisters are doing it for themselves," might certainly come to mind with these four!

The sisters are the pride and joy of their mother, Agnes. One can imagine the challenges of raising four girls, but the triumph of having all of them completing higher education outweighs any growing-up problems. And the daughters are certainly appreciative of the love and support of their mother.

Needless to say, the Vezeau girls have left their mark—we believe they are the largest family currently registered in Ontario, if not in Canada.

Currently Deborah and Suzanne reside and practise in Barrie, Brenda in Sudbury, and Monique in Calgary.

Life Membership for Bonnie Craig

The CDHA Board meeting in June ended on a pleasant note with the announcement that Bonnie Craig had been named a Life member for "her dedication to and leadership of the profession and CDHA." Bonnie has more than earned this distinction throughout a long career in dental hygiene. She has had many roles and accomplishments in the 36 years since graduating from the University of Manitoba with her Diploma in Dental Hygiene. Here are a few of the milestones:

- dental hygienist in private practice and in the Vancouver Health Department;
- Masters of Education (Curriculum and Instructional Design) in 1985, Simon Fraser University;
- professor of dental hygiene at both college and university levels;
- founding and current director of the Dental Hygiene Degree Completion (BDSc) Program in the Faculty of Dentistry, University of British Columbia;
- development of distance education (on-line and web-based) courses in Oral Pathology, Oral Microbiology and Immunology, and Periodontics;
- development of a course for oral health care in residential care settings;
- BCDHA President from 1989 to 1991, when she orchestrated the successful application to the Health Professions Council that dental hygiene be designated a profession (1994);
- CDHA member since 1965 and CDHA Board volunteer in many positions including Secretary, member of Board of Directors, Nominations Committee, Continuing Education committee, BC representative, Co-chair of Task Force on National Dental Hygiene Education Standards, Advisor to Council on Education and Research. Bonnie currently is serving in three



Bonnie Craig

- capacities—representative on the Commission on Dental Accreditation of Canada, member of Task Force on Post-Diploma Dental Hygiene Education, and member of the *Probe Scientific Journal* Review Board;
- founding member of Dental Hygiene Educators Canada;
- publications in wide variety of professional media from 1966 to the present;
- community involvement in the United Way;
- a family that is supportive and proud of her many achievements, a feeling that is reciprocated as she appreciates their help and support in her work.

Congratulations to CDHA's newest Life Member together with great appreciation for all the wisdom and work she has contributed to CDHA and the dental hygiene profession.

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RAFRAÎCHIR, RESTAURER, ALLER DE L'AVANT (suite de la page 169)

Un des premiers changements tangibles que vous verrez, c'est la restructuration de notre campagne de renouvellement des adhésions dans la plupart des provinces.* Votre trousse de renouvellement d'adhésion, maintenant personnalisée ; vous sera postée séparément plutôt que d'être insérée dans la revue. Et aussi, cette année, nous commençons à vous demander plus de renseignements sur vous-mêmes afin de mieux vous représenter au sein des forums nationaux. Le Conseil d'administration de l'ACHD veut s'assurer que votre voix se joigne à toutes celles qui articulent, sur le plan national, la vision des hygiénistes dentaires du Canada. Grâce à ces renseignements, nous allons continuer à réunir ces précieuses connaissances qui viennent de partout au pays. Tant les associations provinciales que les membres comme tels seront en mesure de partager de l'information pour aider la profession à maintenir son processus évolutif ainsi que pour aider à

l'élimination de certains obstacles géographiques et organisationnels. Veuillez prendre quelques minutes pour remplir le formulaire d'adhésion. Nous ferons notre possible pour s'assurer que vous n'avez pas perdu votre temps et que l'information ainsi obtenue vous sera bénéfique au cours de l'année qui vient.

En terminant, nous espérons que vous apprécierez le calendrier commémoratif du 50^e anniversaire, joint à ce numéro, et que vous pourrez en utiliser quelques idées pour célébrer votre profession au cours des ces 16 prochains mois.

Joyeux anniversaire ! 🎉

* En Alberta et en Saskatchewan, les campagnes de renouvellement des adhésions sont coordonnées au niveau provincial.

Dental Hygiene: 25 Years To Celebrate!

by France Lavoie, dental hygienist

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Twenty-five years have already elapsed since the arrival of Dental hygienists in both Quebec and Switzerland. Quite a feat! In Canada and the United States, they are our predecessors, As in Chile, England, and other countries.

It was 25 years ago that, our hearts filled with pride, The profession of dental hygienist was founded. There was the enthusiasm of the first years, The potential to invent the world.

At first, there were many courses and internships in private offices. Progressively, the training got more refined; Specialized training clinics appeared quickly and Progress adopted well-qualified professional and scientific avenues.

What has happened to the wonderful dreams that inspired us? The hoped-for autonomy has been achieved in small parts. While our priorities are prevention and education, They form just a part of what we are.

Throughout the years, professional legislation was amended— Many battles in the war for delegated acts. Depending on one's perspective, each side has lost and won. Politics and strategies emerged out of necessity.

If the childhood of dental hygiene went quite well, Adolescence mounted challenges to authority. As in a family, loving parents feel pushed around When children grow up and demand their own identities.

This 25th anniversary shows a handsome maturity; Respect, dignity, self-confidence have increased. Weary with sometimes being considered irresponsible children, Highly supervised as in a golden prison, are we losing our freedom?

Planning, implementation, and evaluation in sectors public and private Are part of "before-during-after" work in our well-anchored daily lives. Involved in hospitals, sales, research and many varied areas, We have to enlarge the fields of practice and continue our development.

The population, who are central in our priorities, are natural allies. We may forget about ourselves while serving them and even, through intermediaries, being used Is this view fiction or reality? Let's think about our future and avoid being poorly paid professionals.

These 25 years also take us to a crossroads. What do we want the future to be? What should we champion? Custom and habit are reassuring in the well-organized system; New challenges feature both difficulties and treasures to be exploited.

The test is to reconcile the future, the present, and the past. Between dreams and reality, one can find the main thread to weave The experimental canvas and, finally, the completed garment. The future is promising for us, united for progress!

Congratulations, you pioneers and all who persevered. The time to affirm our identity has come; To fully assume it, we should develop ourselves further. Let us build our professional future together, in clarity and solidarity!

March 8, 2001

Hygiène dentaire : 25 années à souligner!

par France Lavoie, hygiéniste dentaire

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Déjà 25 années se sont déroulées
depuis l'arrivée

Des hygiénistes dentaires au
Québec et en Suisse. C'est
toute une épopée!

Au Canada, aux États-Unis, elles
sont nos aînées

Même présence au Chili, en
Angleterre et dans d'autres
contrées

Il y a 25 ans, c'était le cœur empli
de fierté

Que la profession d'hygiéniste
dentaire a été fondée

C'était l'enthousiasme des
premières années

Le potentiel pour tout inventer

Initialement, nombreux cours et
stages en bureau privé

Progressivement, la formation s'est
raffinée

Les cliniques d'enseignement
spécialisé sont vite implantées

Le progrès adopte les voies
professionnelles et scientifiques
bien qualifiées

Qu'en est-il des beaux rêves qui
nous ont inspirés?

Les promesses d'autonomie sont
peu réalisées

Tandis que la prévention et
l'éducation constituent nos
priorités

Ils font partie de notre spécificité

Au fil des ans, les lois
professionnelles ont été
modifiées

Plusieurs batailles dans la lutte aux
actes délégués

Selon les points de vue, chacun a
perdu et a gagné

La politique et les stratégies sont
apparues par nécessité

Si l'enfance de l'hygiène dentaire
s'est relativement bien déroulé

L'adolescence a montré des
contestations face à l'autorité

Semblable à une famille, les
parents adulés se sentent
bousculés

Quand les enfants grandissent et
affirment leur identité

L'anniversaire des 25 ans montre
une belle maturité

Le respect, la dignité, la confiance
en soi ont augmenté

Tannées d'être parfois considérées
comme des enfants sans
responsabilité

Très encadrées, comme dans une
prison dorée, y perd-t-on notre
liberté?

Les planifications, réalisations et
évaluations dans les secteurs
publics et privés

Font partie du travail « avant-
pendant-après » dans notre
quotidien bien ancré

Étant actives dans les secteurs
hospitaliers, vente, recherche et
plusieurs domaines variés

C'est important d'élargir les
champs de pratique pour se
développer

La population est un allié naturel
tout en se situant au centre de
nos priorités

On peut s'oublier à la servir et
même, par des intermédiaires,
être exploitées

Ce point de vue est-il fictif ou
empli de réalité?

Pensons à notre avenir en évitant
d'être des professionnelles peu
rémunérées

D'autre part, les 25 ans nous
conduisent à une croisée

Que veut-on dans l'avenir? Que
doit-on privilégier?

L'habitude est rassurante puisque le
système est bien organisé

Les nouveaux défis recèlent de
difficultés et de trésors à
exploiter

L'enjeu est de concilier avenir,
présent et passé

Entre le rêve et la réalité se
retrouve le fil conducteur pour
créer

Le tissu pour expérimenter et
finalement le vêtement réalisé

Le futur est prometteur en étant
unies pour progresser!

Félicitations aux pionnières et à
toutes celles qui ont persévéré

Le temps d'affirmer notre identité
est arrivé

Aussi bien l'assumer pleinement
pour se développer

Construisons ensemble notre
avenir professionnel en toute
solidarité et sérénité!

le 8 mars 2001

Oral-B/CDHA NDHW™ Contest Announcement



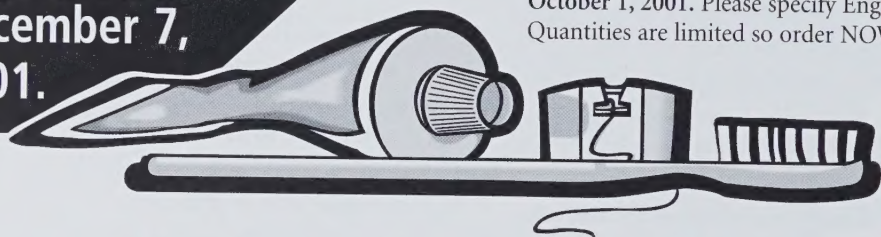
Oral-B Helps Canada's Dental Hygienists Celebrate Their 50th Anniversary

We want to hear how creative you've been in promoting your profession in this very special year. Send us your stories and photos. Entries will be judged on their creativity, planning, volunteer recruitment, educational elements, community impressions and impact as well as innovative partnerships.

To help you get your submission ready, please check the campaign planning kit at our web site <www.cdha.ca> and e-mail us at <info@cdha.ca>, call toll-free at 800-267-5235, or fax 613-224-7283 to request an Oral-B NDHW™ display kit.

**Remember
—the deadline
for submission
of your entry is
December 7,
2001.**

The materials in this kit include Oral-B Periodontal Atlas; CrossAction/Satinfloss poster; Braun Oral-B and CrossAction easels with patient education materials; Oral-B Toothbrush/Interdental products and Floss samples; and Keep your Teeth for Life pads—in total, a \$52.65 value *free* when you fax your request. Requests must be received by October 1, 2001. Please specify English or French. Quantities are limited so order NOW while supplies last!



Concours Oral-B/CDHA SNHD^{MD} – Annonce

Oral-B contribue aux célébrations du 50^e anniversaire
des hygiénistes dentaires du Canada

Nous voulons que vous nous disiez dans quelle mesure vous avez exercé votre créativité pour faire la promotion de votre profession en cette année très spéciale. Faites-nous parvenir vos anecdotes et vos photos. Les envois seront jugés sur leur résultats au niveau de la créativité, de la planification, du recrutement de bénévoles, des éléments éducatifs, des impressions faites sur la collectivité et de leur impact, ainsi que sur la dimension innovatrice des partenariats créés.

Pour vous aider à préparer votre présentation, veuillez aller jeter un coup d'oeil à la trousse de planification de la campagne, au site web <www.cdha.ca> et faites-nous parvenir un courriel à <info@cdha.ca>, ou appelez sans frais le 800-267-5235, ou encore utilisez le télécopieur, au 613-224-7283 pour demander votre trousse de présentation Oral-B SNHD^{MD}.

**N'oubliez pas—la
date limite pour la
présentation de votre
participation est le
7 décembre 2001.**

La trousse contient l'atlas périodontique d'Oral-B; des présentoirs Braun Oral-B et CrossAction contenant des dépliants à l'intention des patients; des brosses à dents et produits interdentaires Oral-B ainsi que des échantillons de soies dentaires; et des blocs de recommandation " Gardez vos dents pour la vie " - une valeur au totale de 52,65 \$ *gratuitement* lorsque vous nous faites parvenir votre demande par télécopieur. **Les demandes doivent nous parvenir au plus tard le 1er octobre 2001.** Veuillez spécifier si les documents doivent être en anglais ou en français. Les quantités sont limitées; commandez dès MAINTENANT avant épuisement des stocks.

**\$5,000 in prizes! \$100 for each of
the 50 years of dental hygiene!**

Get involved and you could win!

Enter by Friday, December 7, 2001

**Individuals, \$1000; clinic teams,
\$2,000; and dental hygiene
schools, \$2,000**

**Half of each prize will be shared
with the winner's local dental
hygiene chapter**

**5 000 \$ en prix ! 100\$ pour chaque
année d'hygiène dentaire !**

Participez et vous pourriez gagner !

**Inscrivez-vous au plus tard le
vendredi 7 décembre 2001**

**Individus, 1 000 \$; équipes de
cliniques, 2 000 \$; et écoles
d'hygiène dentaire, 2 000 \$**

**La moitié de chaque prix sera
partagée avec le chapitre
local de l'association d'hygiène
dentaire de la gagnante.**

Dental Hygiene: 150 Years in the Making*

by Ron Jette †

When in the Course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another...

From the U.S. Declaration of Independence, 1776

While this may have been the most famous Declaration of Independence to come from the City of Brotherly Love, it was not the only one. In fact, to dental hygienists, it may not even be the most important one.

Humble beginnings

Over a century later, just down the street from where the Liberty Bell now sits, a Philadelphia dentist by the name of Dr. D.D. Smith was setting the stage for dental hygienists to make their own declarations of independence. The year was 1894 and Dr. Smith ran what is thought by many to be the first practice that was based on the *prevention* of dental disease, rather than the *treatment* of it. He also preached what he practised, speaking to many and publishing papers on prevention and patient education.

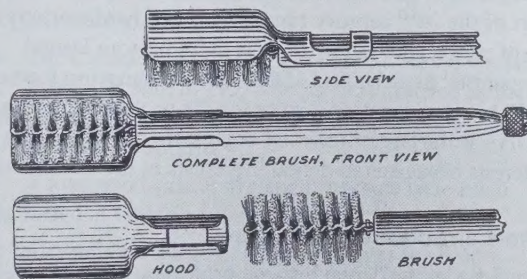
While he may be considered by many to have been a dentist ahead of his time, you must remember that he practised dentistry 40 years *after* an editorial appeared in the *American Journal of Dental Science* advocating prevention in dentistry.

In 1907, the Connecticut Dental Practice Act was amended to include a definition of dental hygiene, paving the way for its formal recognition as a legitimate health occupation.

While Dr. Smith may have been the first to practise and preach prophylactic care, Dr. Alfred Civilion Fones was, perhaps, the most influential. Dr. Fones—who became known as the father of dental hygiene—was a Bridgeport, Connecticut dentist and an enthusiastic advocate of oral prophylaxis. Despite strong opposition from other dentists, he opened a training centre—the Fones Clinic for Dental Hygienists—in November 1913. (Rumour has it that the first classes were held in his garage.)

FIREFLY!

The Wonderful Revolving Tooth-brush
DESIGNED TO PERFECTLY CLEANSE EVERY PART
OF THE TOOTH!



Brushes hitherto in use succeeded in cleaning the more prominent parts, to the corresponding disadvantage of the less exposed places. Particles of food were merely pushed into crevices there to remain, ferment and decompose, causing fetid breath—Halitosis—creating tartar, introducing favorable conditions for decay and disease—the forerunner of that dread malady pyorrhea with all its attendant afflictions.

You are now offered a perfect tooth-brush that will reach down and into and between the teeth removing all foreign matter and cleanse the parts so as to leave no breeding ground for germs or bacteria. The gums are gently massaged, circulation is promoted, ruddy gums are made to embrace pearly teeth, dentist and doctors bills are eliminated and health beauty and comfort the result.

The brush is simple in design and easy to operate. It is constructed on sanitary principles, is easily cleaned and sterilized without injury to the parts, keeping it pure and sweet. Anyone can use it by observing the few instructions accompanying each brush.

THE REVOLVING TOOTH-BRUSH CO.
MANOTICK, ONT.

Distributors
PERFECTION BRUSH CO.
1118 QUEEN ST. W., TORONTO.

Dr. Alfred Civilion Fones...the father of dental hygiene...opened a training centre—the Fones Clinic for Dental Hygienists—in November 1913."

His other "radical" ideas included bringing his prevention services to all children attending Bridgeport schools. He convinced the local school board to fund this idea and most of the graduates from his first class found work in the schools.

Recognition of the importance of dental hygiene spread through the United States over the following three decades and by 1945, there were 17 schools of dental hygiene in operation and practitioners were licensed in 48 states.

In the last 50 years, dental hygiene has been influenced by two related phenomena. The first is the worldwide movement toward the recognition of dental hygiene. Until 1945, the movement was based mostly in the United States.

* This article is an updated history, based on the "History" chapter in Health Canada's 1988 publication, *The Practice of Dental Hygiene in Canada*.

† Ron Jette is a member of the Tristan Creative Writing Inc., Ottawa, Ontario

Images are credited to the Dentistry Canada Museum, housed at the Dentistry Canada Fund, dentistry's charitable foundation for oral health in Canada.

The second was the perceived shortage of dental practitioners that led to giving hygienists more of the dental workload. An example of this shift can be found within the ranks of the Canadian Armed Forces in the early 1960s when hygienists were given additional restorative functions and renamed "dental therapists." The University of Manitoba was also an early adopter of these new dental practices as it sought to educate dental hygienists to perform certain prosthetic dentistry functions to the same level of competence required of dental students.

While the shortages never did develop to the extent that was expected, the scare was enough to force changes within the profession.

Many advancements in the United States since the early part of the 20th century came because of hard work by a lot of people, including those at the American Dental Hygienists' Association (ADHA), an organization formed in 1923 to act as a national voice for the profession. Today, ADHA is the largest national organization representing the interests of registered dental hygienists in the United States.

The Canadian experience

In Canada, the dental hygiene profession really began to come of age in the mid-1940s. Although Ontario first recognized dental hygiene as a health occupation in 1947—the first province to do so—1949 is considered the year when dental hygiene became "official." It was in 1949 that three young women from Prince Edward Island—Dorothy Peters, Annabel Allen, and Thelma Read—received Canadian National Health Grants to train in Boston as dental hygienists. The following year, Mary Geddes became this country's first registered dental hygienist after graduating from the University of Minnesota School of Dental Hygiene and registering in Saskatchewan.

Following Ontario's move to officially recognize the profession in 1947, it took over two decades before dental hygiene was legally recognized across the country as a health occupation:

Ontario	1947
Saskatchewan	1948
Prince Edward Island	1950
British Columbia	1951
Manitoba	1952
New Brunswick	1953
Nova Scotia	1955
Yukon	1958
Alberta	1959
Quebec	1962
Northwest Territories	1967
Newfoundland	1968

In 1950, Andrée Hébert (later Andrée Brunelle) joined the staff of the Department of National Health and Welfare. After one year, she left to join the University of Toronto's Faculty of Dentistry where she became the founding director of Canada's first dental hygiene program. The faculty awarded diplomas in dental hygiene until 1977 when the program was transferred to Ontario community colleges. Since 1977, the faculty has offered a special degree program in dental hygiene to a limited number of students who want to take up academic positions or administrative responsibilities in the community colleges.

In 1963, several alumni of the School of Dental Hygiene at the University of Toronto felt it was time their profession had its own national voice that could speak out on issues of importance to them. Gathering support from across the country, they formed the Canadian Dental Hygienists Association (CDHA) and chose Mai Pohlak as its first president.

The CDHA held its first convention and general meeting the following year in Edmonton. With representatives from Alberta, Manitoba, Ontario, and Nova Scotia in attendance, a provisional constitution was adopted and Jill Dossett was elected as president for 1964–65. In 1965, the CDHA's constitution was ratified at a meeting in Quebec City.

1949 is considered the year when dental hygiene became 'official'."

In 1967, British Columbia joined the fold followed by Saskatchewan in 1970, Quebec and Prince Edward Island in 1972, and New Brunswick in 1974. In 1978, Newfoundland became the tenth constituent association. However, because the Quebec Dental Hygienists' Association disbanded in 1991, the CDHA currently consists of nine constituent members.

The CDHA, without a doubt, has played a major role within the developing dental hygiene field. While most of its efforts relate specifically to providing benefits to its members in their day-to-day activities, there are a number of national events worth noting:

In 1968, the Department of National Health and Welfare convened the Ad Hoc Committee on Dental Auxiliaries to which the Canadian Dental Hygienists Association presented an important brief. The committee's report was significant in the development of extended duties for dental hygienists, particularly in the area of restorative dentistry.

In 1974, the Canadian Dental Hygienists Association sponsored the Conference on Dental Auxiliaries, a unique event because of its broad representation, ambitious agenda, and the free and wide-ranging discussion among representatives from every sector of the dental field.

The Canadian Dental Hygienists Association was a founding member of the International Liaison Committee on Dental Hygiene in 1970.

In 1980, the CDHA presented a brief to a federally sponsored commission under the chairmanship of Justice Emmett Hall. The brief contained 14 recommendations dealing with research in dental care delivery, the regulation and supervision of dental hygienists, the necessity for practice standards and quality assurance mechanisms, the improvements in dental hygiene education and accreditation systems, and a wider role for dental hygienists in health promotion and other community dental health activities.

In partnership with the Allied Dental Educators' (ADE) Committee of the Association of Canadian Faculties of Dentistry, the CDHA developed the *Policy Framework for Dental Hygiene Education in Canada, 2005*. Within this framework, which was developed in October 2000, the CDHA adopted the position that dental hygiene education programs offer a baccalaureate degree in dental hygiene as this will be the required credential for entry to dental hygiene practice for all new students commencing in the year 2005.

Provincial milestones

Ontario

1947 Despite significant opposition from some parts of the dental profession, the Dentistry Act was amended to include a section on dental hygiene, making Ontario the first province to legally recognize dental hygiene as a profession.

// The CDHA held its first convention and general meeting...[in 1964] in Edmonton.... a provisional constitution was adopted and Jill Dossett was elected as president for 1964-65."

1951 The first dental hygienist was licensed in the province.

1951 The University of Toronto's Faculty of Dentistry began offering a two-year course (diploma). Its first director was Andrée Hébert (later Brunelle) and the first class consisted of six students (who still meet annually in Toronto).

1956 The Canadian Armed Forces began training dental hygienists and, in 1957, the program moved to the Canadian Forces Dental Services School at the base in Borden, Ontario.

Mid-1970s A total of 11 dental hygiene programs were established at Ontario colleges.

1982 Algonquin College in Ottawa became the first Ontario community college to offer a dental hygiene program in French.

1989 Ontario hosts the International Symposium on Dental Hygiene.

1993 The North American Research Conference, "An Exploration into the Future," is held in Niagara Falls.

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WOULD YOU RUN OUR SOFT TISSUE MANAGEMENT PROGRAM FOR \$50.00 PER HOUR?

WE HAVE PEOPLE WHO NEED YOUR HYGIENE SKILLS!

WHAT WILL IT TAKE FOR YOU TO JOIN US? WRITE YOUR OWN PROPOSAL.

Take this chance to get creative and join a very caring office that prides itself in offering the very best service to discriminating clients.

We have the latest equipment in a bright room with floor to ceiling windows.

Our hygienist is an integral part of our team that is dedicated to helping our clients achieve the highest level of oral health that they desire.

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CALL DR. JEFFERY WILLIAMS IN CRANBROOK, B.C.

AT 1-866-522-8176 OR AT THE OFFICE 250-489-4731

- 1993** Ontario becomes the third province to recognize dental hygiene as a self-regulated profession.
- 1994** The transfer of responsibility of dental hygiene from the Royal College of Dental Surgeons to the College of Dental Hygienists of Ontario—a process that began in 1989—is completed.
- 1996** The National Board Examination is added to the list of requirements for persons wanting to register as dental hygienists in Ontario.

Saskatchewan

- 1948** Saskatchewan becomes the second province to legally recognize dental hygiene as a profession.
- 1949** National Health Grants begin to be used to send young Saskatchewan women to the United States or the University of Toronto to train as dental hygienists. These newly minted dental hygienists would return to the province to work in dental health education and provide topical-fluoride applications to children.
- 1950** Mary Geddes registers as the first legally recognized dental hygienist in Canada.
- 1976** An amendment to the Health Act allows dental hygienists to administer local anesthesia.
- 1979** The Wascana Institute in Regina—part of the Saskatchewan Institute of Applied Science and Technology network—initiates a dental hygiene program designed for dental (nurse) therapist graduates. Under the leadership of its first director, Toni

Cannon, dental therapists can become licensed as dental hygienists. (Dental therapists normally trained to work with dentists to provide restorations, extractions, and preventive dental services.)

- 1998** The Dental Disciplines Act was proclaimed.

Prince Edward Island

- 1949** Three young women from Prince Edward Island—Dorothy Peters, Annabel Allen, and Thelma Read—received Canadian National Health Grants to train in Boston as Dental Hygienists. They returned to PEI where they were hired by the Dental Division of the Department of Health under its newly appointed Director of Dental Services, Dr. Brian O'Meara. Prince Edward Island was the first province to employ dental hygienists in a department of health.
- 1950** Dental hygiene was legally recognized by the province.
- 1969** Prince Edward Island was the first province to license and employ dental hygienists with expanded duties in restorative dentistry. These hygienists were trained at Dalhousie University.
- 1969** What began as a research project resulted in Prince Edward Island's becoming the first province to employ hygienists with expanded duties in private practice.

British Columbia

- 1951** Dental hygiene was recognized by the College of Dental Surgeons of British Columbia.



COLLEGE OF NEW
CALEDONIA
PRINCE GEORGE



Dental Hygiene Instructor

Reference #: 01-062FP

The College of New Caledonia, centered in Prince George, British Columbia, is a comprehensive community college with a large, modern complex and four satellite campuses serving the needs of a regional population of 200,000.

The College invites applications for a full time, probationary, Dental Hygiene Instructor position beginning December 2001 entailing responsibility for didactic, pre-clinical, clinical and lab instruction.

Requirements: You must have a Bachelor's degree in a related field, but preference will be given to candidates with relevant Master's preparation. The preferred candidate will also be a Graduate from an accredited Dental Hygiene program. You should be eligible for licensure with CDHBC, and have had clinical practice experience. Post secondary teaching experience is considered an asset.

You must be legally entitled to work in Canada.

Salary: The College offers a competitive salary commensurate with qualifications and relevant experience, and an excellent fringe benefit package.

To Apply: Please submit your resume to Human Resources at the address below quoting the **job title** and the **reference #**.

Closing date: Thursday, October 11, 2001 at 3:00 pm.

Prince George, a city of 80,000, is the focal point of commercial, medical, and educational services for central BC. The City offers affordable housing, well-developed parks and recreational areas, as well as a wide variety of cultural and social amenities.

We are committed to employment equity and provide a smoke-free work environment. The College thanks all candidates in advance, but only those candidates selected for an interview will be contacted.

College of New Caledonia 3330-22nd Avenue, Prince George, BC V2N 1P8
Tel (250) 561-5828 • Fax (250) 561-5864 • hr@cnc.bc.ca • www.cnc.bc.ca/hr/index.html

- 1952 A University of Oregon graduate wrote the licensing exam but remained for only a short time in British Columbia.
- 1953 Jo Gardner and Helen Balanko—also graduates of the University of Oregon—became the first dental hygienists to be employed in private practice in the province.
- 1964 The British Columbia Dental Hygienists' Association opened its doors.
- 1968 Prior to 1970, most British Columbia dental hygienists were graduates of programs in the western United States. In 1968, the University of British Columbia's new Faculty of Dentistry opened a dental hygiene program under the directorship of Margaret Robinson.
- 1970 The first class from the University of British Columbia's new dental hygiene program graduated.
- 1978 The University of British Columbia's dental hygiene program became the first in Canada to include local anesthesia as a competency for dental hygiene practice. This same year, this competency is added to the list of dental hygienists' duties.
- 1980 Continuing dental education becomes mandatory for dental hygienists.
- 1986 A new dental hygiene program was established at the Vancouver Community College when the program at the University of British Columbia was terminated.
- 1987 A new dental hygiene program was instituted at the College of New Caledonia in Prince George, British Columbia.
- 1995 The College of Dental Hygienists of British Columbia is established, making dental hygiene a self-regulating profession.

Manitoba

- 1952 Bylaw IV of the Dental Association Act paves the way for the Manitoba Dental Association to keep the licensing and registration records of dental hygienists.
- 1956 Kay Peschel, who had been working as a dental assistant until then, becomes Manitoba's first dental hygienist when she takes a position with the provincial department of public health.
- 1960 In an effort to stave off the legal recognition of denture therapists, the Dental Association Act is amended to include expanded duties for dental hygienists in prosthetics.
- 1963 Margery Forgay begins serving as the director of the University of Manitoba Faculty of Dentistry's School of Dental Hygiene, the third such university-based program in Canada to be assisted by a Kellogg Foundation Grant. Dixie Scoles was the program's first full-time assistant professor and clinic director.
- 1990 Manitoba hosted the pilot workshop entitled "Taking the Steps Toward Ensuring Quality Dental Hygiene Care."

- 2000 A change in legislation allows dental hygienists to administer local anesthetic.

New Brunswick

- 1953 Dental hygiene was legally recognized in New Brunswick. Later that year, Margaret Berry (later MacLean), a Columbia University graduate, becomes the first dental hygienist in the province. Ms. MacLean later went on to become the founding director of the School of Dental Hygiene at the University of Alberta.

Nova Scotia

- 1955 By way of an addition to the Dental Act of Nova Scotia, dental hygienists are legally recognized in Nova Scotia.
- 1961 The School of Dental Hygiene at Dalhousie University was founded under the directorship of Janet Burnham. This became the second university-based program in Canada to be assisted by a Kellogg Foundation Grant.

**Dental hygiene
by the numbers 2001**

- 300,000 The number of dental hygienists worldwide.
- 100,000 The number of dental hygienists in the United States.
- 14,000 The number of dental hygienists in Canada.
- 9,000 The number of dental hygienists who are members of the CDHA.
- 256 The number of dental hygiene schools in the United States.
- 90 The percentage of dental hygienists working in provinces that recognize dental hygiene as a self-regulating profession.
- 27 The number of Canadian programs offering diplomas in dental hygiene.
- 5 The number of provinces that recognize dental hygiene as a self-regulating profession (British Columbia, Alberta, Saskatchewan, Ontario, and Quebec).
- 4 The number of western provinces that include the administration of local anesthesia in their dental hygiene "Scopes of Work."
- 3 The number of Canadian programs that offer baccalaureates in dental hygiene (University of Toronto, University of Alberta, and University of British Columbia).
- 2 The number of provinces where dental hygienists can contract their services to long-term care facilities (Ontario and British Columbia).
- 1 The number of professions whose primary concern is the prevention of oral disease.

- 1967 The Act governing dental hygienists is revised, making Nova Scotia unique in that it lists what dental hygienists *cannot* do rather than what they *can* do.

Yukon Territory

- 1954 The Dental Profession Ordinance is amended to recognize dental hygienists officially.

Alberta

- 1920s While some dentists showed support for the use of oral prophylacticians (persons with skills similar to those of a Fones graduate), not everyone was in favour. In fact, the Board of Directors of the Alberta Dental Association were vehemently opposed to the idea.
- 1951 The first dental hygienist to work in Alberta was Joan Engman. She had graduated from the University of Michigan and worked for the Calgary Health Department. Because there were no dental hygiene programs in Alberta, women were often given National Health Grant bursaries and sent south to train. They would later return to work in various public health programs throughout the province.
- 1959 With financial assistance from the W.K. Kellogg Foundation, the University of Alberta's Faculty of Dentistry moved to open a school of dental hygiene in the 1950s. The provincial government opposed this idea, preferring instead to train dental nurses, similar to those employed in New Zealand. In 1959, the Dental Auxiliaries Act was adopted and the University of Alberta was asked to prepare dental auxiliaries who would be employed through public health programs.
- 1961 The first students were accepted into the program with graduates receiving both dental hygiene diplomas and dental auxiliary certificates.

Quebec

- 1940s If not for insurmountable opposition from within its own ranks at the University of Montreal, dental hygiene might have been recognized as an essential part of good oral health decades sooner than it was. In the 1940s, Dr. Ernest Charron, dean of the university's Faculty of Dental Surgery wanted to open a dental hygiene program. It seemed that he had everything he needed to do just that including funding, a dental facility, and even a program director, Andrée Hébert (later Brunelle), a graduate of Columbia University. Leaders from the faculty responsible for training public health dentists in the School of Hygiene put up obstacles that Dr. Charron just couldn't overcome. They were concerned that this proposed new school of dental hygiene would confuse the public and the government and would derail the development of public health. There was concern that dental hygienists would appear as substitutes for public health dentists. The motion to open a dental hygiene program was defeated by

University Senators and it would be over two decades before there was serious activity in this area again.

- 1962 Dental hygiene was officially recognized in Quebec.
- 1971 Despite the obvious need, there were fewer than 20 dental hygienists prior to 1970 working in the entire province. It was difficult to attract dental hygienists to Quebec from other provinces because of the language barrier, and it was clear that francophone dental hygiene programs were needed. The Faculty of Dentistry at the University of Montreal opened a three-year degree program to educate dental hygienists under the then-current Dean, Dr. Jean-Paul Lussier, and Dr. Geneviève Cuzak. The program's first director, Dixie Scoles, arrived the following year.
- 1974 The University of Montreal's dental hygiene program was shut down and the job of turning out graduates was given to dental hygiene programs within CEGEPs (similar to community colleges but also preparation for university). In its first five years, CEGEPs turned out 900 graduates. As of this writing (2001), there are eight dental hygiene programs in the CEGEPs.
- 1975 The Corporation professionnelle des hygiénistes dentaires du Québec (Professional Corporation of Dental Hygienists of Quebec) was formed. Although the Quebec government still determines the range of dental hygiene functions and the level of supervision required, this transformed dental hygiene into an autonomous profession with its own board and regulations.

Northwest Territories

- 1967 Dental hygiene was legally recognized.

Newfoundland

- 1957 Trained at the University of Toronto, Gayle O'Driscoll registers as the first dental hygienist in Newfoundland.
- 1968 Dental hygienists are officially recognized in law although some dental hygienists are already working in the province (including Gayle O'Driscoll, noted above).

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- United States. 1776. Declaration of Independence [on-line]. [Cited August 11, 2001.] <www.constitutioncenter.org/sections/hdocs/declaration.asp>. 

Interview with Dr. Esther M. Wilkins, BSc, RDH, DMD

by Patrick Gant*

"Learning never ends." That's one of the many lessons in life that Dr. Esther Wilkins, BSc, RDH, DMD, shares with dental hygienists in a 1998 handbook she wrote called, appropriately enough, *A Little Book of Dental Hygienists' Rules*. Lifelong learning is perhaps the best way to start to describe Dr. Wilkins' impressive professional credentials. Dentist, periodontist, dental hygienist, published author, instructor...she is an accomplished professional in all of these fields. Having begun her career as a dental hygienist shortly before the time the profession was first established in Canada, Dr. Wilkins went on to study dental medicine and periodontology. Today she is a clinical professor with the Department of Periodontology at Tufts University in Boston, Massachusetts. She is also a visiting instructor with several dental hygiene education programs in the United States and participates annually as an instructor in up to 15 different continuing education programs. The courses have taken her to Canada, China, Saudi Arabia, Italy, Israel, Australia, and New Zealand.

Dr. Wilkins wrote *Clinical Practice of the Dental Hygienist*, a book many consider to be the dental hygienist's bible. This text is used worldwide as a resource for dental hygiene practitioners and has been translated into Japanese, Canadian French, Italian, and Korean. She considers the text her life's work and is currently preparing material for the ninth edition of the publication.

We spoke with Dr. Wilkins about her books, her professional career, and about what the future holds for dental hygiene practitioners.

Q: In Canada, dental hygiene began as a profession in 1951 with the establishment of the first dental hygiene program, which had a graduating class of fewer than 10. You've been there since the beginning. How has the profession changed since the 1950s?

Changes in the profession have been greatly influenced by research. Fluoridation of municipal water is another area that has brought about significant changes in the health of patients. This fact was not lost on the Centres for Disease Control, which ranked water fluoridation as one of the top-10 public health improvements of the last century. Research in periodontology is another area where we have seen incredible progress, especially in the last 25 years. We're seeing all kinds of scientific advances in this area, especially with respect to microbiology and preventive care.



Q: Could you describe what the work was like for a dental hygienist back in the early 1950s?

I can share with you what it was like in the United States. In the past, most dental hygienists were in private practices. Others worked mainly in the school systems. The job of a private practitioner was generally limited to teaching good brushing skills, hunting for cavities, and scaling teeth. This was because state laws placed significant restrictions on the kind of work a hygienist could do. In Massachusetts, for example, we had a law that limited scaling to two millimetres below the gingival margin. So the benefits of a hygienist's work, while helpful, were quite limited. Similarly, the dental hygienists who worked in the schools generally examined the teeth of school children and advised parents when their children needed to visit the dentist. A great deal has changed since then. There is a tendency toward more specialization now as well as the need for dental hygienists to keep up with the latest research and scientific advances in the field.

Q: You've been deeply involved in your work for over 50 years. That's a long time to stay at any job. What keeps you dedicated?

* Patrick Gant is a member of the Tristan Creative Writing Inc., Ottawa, Ontario

This is an exciting, changing profession that benefits from the excellent ongoing research in the field. But more important than the advances is the importance of having a healthy mouth and healthy teeth. Think about it: Much of how we are judged when we are making a first impression comes down to the mouth. By teaching good oral hygiene and by providing competent care, dental hygienists can do a great deal to help improve the quality of life of patients. That's why I'm teaching at Tufts University. I want my students to provide the very best dental care. I don't want incomplete treatment of patients.

Q: Would you say that one of the biggest improvements in dental hygiene over the last 50 years has been the overall improvement in the condition of patients' teeth?

For a percentage of the population in the United States, this is true. But let's bear in mind that only 60 per cent of American cities are treating their water with fluoride. So there are still a lot of people out there who are suffering from preventable cavities.

But there is another important factor that determines the oral health of patients. That factor is called *access to care*. We need to understand why some people don't visit their dentist and dental hygienist regularly. In my view, there are three reasons for this: people don't have the money to pay for the services; they're not in the habit of visiting a dentist or dental hygienist; or they don't have an appreciation of what a dentist and dental hygienist can do for them.

Q: Your textbook, *Clinical Practice of the Dental Hygienist*, was first published in the late 1950s. The eighth edition of this text was published in 1999, so in effect, this book has followed the profession through many of the changes we've seen. How is this reflected in the text?

I'm working on the ninth edition of the text right now and I can tell you that I seldom make cuts to the previous edition. Rather, I find that I am always adding to the book, adding new research and new approaches to oral health care. In fact, when I *do* cut material in a new edition, I get letters in the mail from readers who take me to task for removing material, which is quite surprising when you consider how lengthy the text has become!

Q: Let's talk about that new edition of the textbook. What can we expect?

This textbook is really my life's work. I am at the preliminary stage right now in my work on the new edition. The first thing I'm doing is an update of all the latest research in the field of dental hygiene. I am also working on new chapters—potentially two of them. The first chapter will be on oral health care for pre-school children. It will place a lot of emphasis on the importance of daily brushing—even twice a day—to remove bacteria from the teeth and will talk about the benefits of fluoridation in water. Another important thing it will cover—and this is good advice for parents of young children to remember—is not to use sweets as a reward for good behaviour. Sweets everyday do an awful lot of harm to small children's teeth, not to mention those of adults. If you want to reward a child, buy a toy instead.

Q: What about the second new chapter?

I am tentatively planning a second new chapter that will cover respiratory diseases and the special procedures that need to be followed when caring for these patients. Other material will be updated, such as how to treat patients with infectious diseases, but the text will also review new techniques that are in high demand, such as bleaching.

Q: Your book places a heavy emphasis on quality control and personal competence in patient care. How important are these qualities in this profession?

Indeed, these are the most important qualities for a practising professional to possess. We need to make sure that the professionals who are treating patients are always giving their best efforts, equipped with the best tools and the most up-to-date practices. A willingness to continually learn—lifelong learning—is an important corollary to this idea, since there is a remarkable amount of new research that is emerging all the time.

Q: Some organizations, such as the American Dental Hygienists' Association, say that human resources and staffing are among the most pressing problems of the profession today: there simply aren't enough hygienists to go around. What can the industry do to address this problem?

We can talk about opening more schools, but an even more effective solution could be to look for ways to assist with the placement of dental hygienists who have just finished school. This would not only help orient new graduates but would also give them a support network on which they could rely, so that they can really enjoy their chosen field and *stay* with it. Also, we should be looking at ways to seek out hygienists who have left the profession and entice them to return to work. A lot of these people may have left or retired early to devote time to their families and might consider returning to the profession, even on a part-time basis.

Q: Some groups have looked at the shortage of dental hygienists and have decided that this is a good reason to shift dental hygiene duties to dental assistants. What's your view on this?

You can't expect to maintain quality standards of care if you do things that lower the standards. Having dental assistants perform certain tasks is different from having them doing all of the tasks of a hygienist. Some dentists talk of a preceptor-type hygienist in which they might teach their assistants to scale and other dental hygienist responsibilities. Most dentists simply don't have the time or training to do this, so again the standards would suffer terribly.

Q: There has been a lot of talk in health care professions about the aging North American population and its effects on health care. What impact do you see this having on the work of dental hygienists?

This is a very important area because we are developing new groups of professionals who work exclusively with seniors. This is another area where access to care comes into play. Consider the situation of infirm seniors. In many cases, their mouths have been terribly neglected so they are losing teeth and are more prone to serious illnesses, includ-

ing pneumonia. This is an area where dental hygienists can make a significant difference in the quality of life of their patients. After all, when you're a senior, having all your teeth is a source of great pride. Plus it makes a big difference to these people when they are able to enjoy the taste of food and are able to chew. This is something that younger people might take for granted but it is a blessing to seniors.

Q: In your view, what opportunities do you see for the development of the dental hygiene professional over the next decade?

Specialized services is an important area. For example, some are specializing in treating seniors; others are specializing in cancer treatment; others are specializing in treating children. So you can see that there are a lot of different areas and each requires the dental hygienist to have a special understanding of the needs of the patient. Thus the trend really for the next 10 years will be that students will need to study in greater depth to understand the needs of patients in these specialized services.

Q: A top priority of the Canadian Dental Hygienists Association is to "earn recognition as a key player and partner in decision making in health." In your view, what steps can the profession take to reach this goal?

When we talk about being a key player, what we're really talking about being a *primary health care worker*. That's important to keep in mind. I think the profession is already taking the right steps by improving the level of education of hygienists and by maintaining high standards of care. The dental hygienists who are working in the field help to entrench these standards every day.

I'm not sure what else I can say about the Canadian experience, but I can share with you some thoughts from the American perspective. If we could open up state laws so that dental hygienists could practise without immediate supervision from dentists—while still ensuring general supervision of their work—then we could do so much more to help advance access to care, an issue we spoke about a few minutes ago. This would mean that a dental hygienist could conduct school programs, visit geriatric facilities, perform non-surgical periodontal therapy, and identify things like a pit or fissure in need of a sealant without a dentist always having to look at it and say, "Oh, yes, you can do that."

Q: Let's talk for a moment about the licensing of dental hygienists by dentistry boards. What's your view on this practice? Has it helped or hindered the growth of the profession?

It's important to bear in mind that Canada is much farther ahead of the United States in its advances in the field of dental hygiene. Canadian provinces have much more self-regulation in terms of licensure of dental hygiene. In the United States, dental boards are set up in each state. While boards include one or two dental hygienists as members, they tend to be in the minority and can be outvoted on matters when they are at odds with the dentists who sit on the same boards. So, in that sense, the boards have hindered the profession's ability to grow. But there are encouraging signs that changes are coming. Important improvements have been introduced in Colorado, New Mexico, Oregon,

and Washington that are helping to broaden the responsibilities of dental hygienists.

Q: What steps should be taken to support the integration of oral health care into general health care?

Responsibility is important in this field of work. The dental hygienist has to look at the *whole mouth*, not just the teeth, to look for early signs of cancer and other diseases. In the cases of dental hygienists who are specialists in a particular field, they enjoy excellent working relationships with their health care counterparts in hospitals. But we need to make sure that physicians learn to work more closely with dental hygienists. I am concerned about physicians because there is so little time devoted to the study of the mouth in medical school. That's where dental hygienists can play a really important role and lend their expertise to ensure that their patients enjoy overall good health. Many systemic conditions have been shown to be directly related to periodontal infection.

Q: What are the characteristics that set dental hygienists apart from other professionals in the health care field? What does it take to achieve excellence in this profession?

I think dedication and desire for people to enjoy improved health are important characteristics. Of all the dental hygienists I know—and I know many of them—these are the qualities that stand out for me. Let's remember that this is an important profession. Oral care is a needed, wanted service. And it can make such a big difference in people's lives. Dental hygienists need to remember how valued they are by their patients and they need to show pride in their profession.

Being dexterous with the dental instruments is also important. However, when dental hygienists cannot perform clinical dental hygiene, there are many other ways that they can still be productive. Some opt for work supervising students who are on visitation assignments; others work as advisors in cancer care clinics. There's a great deal that these people can still contribute to the profession.

Q: Have you seen a change over the years in the kind of person who decides to become a dental hygienist?

That's an excellent question. Indeed, I have seen a great deal of change. Fifty years ago, dental hygienists were predominantly young women. But now we're seeing more gender parity, a more diverse mix of ages, and people who are joining the profession midstream in their careers. As a result, the profession is becoming more versatile and more goal oriented. Hopefully, this will also mean that more people will stay with the profession longer than in the past. After all, this is not a static profession; it is changing all the time.

Q: Any final words of advice for hygienists or the industry in general?

I think the best advice I can offer comes out of my handbook, *A Little Book of Dental Hygienists' Rules*. As the title suggests, this is a little book that I put together to counsel dental hygienists in their work. Let me share a couple of lines from the book: "Don't be afraid to be idealistic. In a precise profession such as dental hygiene, there is no room for mediocrity." Here's one more: "Keep an open mind. There is a lot of new research out there and more on the way." 

CDHA Presidents

1963 TO 2001

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Salme Lavigne
2000–2001



Lynda McKeown
1999–2000



Donna Bowes
1998–1999



Judy Clarke
1997–1998



Sue MacIntosh
1996–1997



Margery Forgay
1995–1996



Maxine Borowko
1994–1995



Fran Richardson (Cotton)
1993–1994



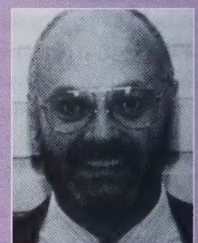
Lorraine Boomhour
1992–1993



Terry Mitchell
1991–1992



Myrna Frizell
1990–1991



Henry King
1989–1990



Ellen Williams
1988–1989



Ellen Brownstone
1987–1988



Dianne Gallagher
1986–1987



Audrey Newcombe
1985–1986



Laura Mowat
1984-1985



Mary Pelletier
1983-1984



Linda Berry
1982-1983



Pat Grant
1981-1982



Marge Bailey
1980-1981



Diane Girardin
1979-1980



Carol Worobey
1978-1979



Jane Costigane
1976-1978



Iris Rountree (Gold)
1975-1976



Sherita Clark
1973-1975



Marjorie Dimitri
1972-1973



Linda Zambolin
1971-1972



Sharon Amer (French)
1970-1971



Patricia Johnson
1969-1970



Shelly Altman
1968-1969



Jo Gardner
1967-1968



Bonnie Graham Snowdon
1966-1967



Dixie Scoles
1965-1966



Jill Stephenson Dossett
1964-1965



Mai Pohlak
1963-1964

Patients with Gastritis Show Oral Colonization with *Helicobacter pylori*

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Introduction - The gram-negative bacterium *Helicobacter pylori* is a causative micro-organism of chronic type B gastritis and peptic ulcer disease. The pathway of *H. pylori* transmission is unknown, but dental plaque is a possible reservoir. The ability to detect *H. pylori* in dental plaque and tongue scrapings was assessed, including the effects of systematic therapy to eradicate the microbe from the stomach.

Methods - The study included 81 patients referred for evaluation of dyspepsia. Specimens of dental plaque and tongue scrapings were obtained from each patient for assessment through the use of the Campylobacter-like organism test. The patients underwent endoscopy, at which gastric biopsies were taken for histologic examination and Campylobacter-like organism tests. Patients with *H. pylori* infection received triple therapy with omeprazole, clarithromycin, and amoxicillin to eradicate the organism, after which the oral sampling procedures were repeated.

Results - Sixty-three of the patients were diagnosed as having chronic gastritis. Urease positivity was noted in plaque samples from 79% of patients overall and from tongue

scrapings in 59%. Among the patients with gastritis, these figures were 83% and 59%, respectively. Triple therapy successfully eradicated *H. pylori* from the gastric mucosa in nearly all the patients. However, the dental plaque and tongue scrapings results were unchanged.

Discussion - Patients with gastritis appear to have a high rate of oral colonization with *H. pylori*. The mouth may, therefore, serve as an important reservoir for *H. pylori* reinfection after treatment to eradicate the organism.

Clinical significance - Local plaque control treatments might play a role in eradication of *H. pylori* colonization of the mouth, thus preventing recolonization of the stomach after systemic therapy.

Ozdemir A, Mas MA, Sahin S, et al: Detection of *Helicobacter pylori* colonization in dental plaques and tongue scrapings of patients with chronic gastritis. *Quintessence Int* 32: 131-134, 2001

Reprints available from A Özdemir, Gülhane Askeri Tip Akademisi (GATA), Dişhekimliği Merkezi, Periodontoloji Ana Bilim Dalı Başkanlığı, 06018, Etlik-Ankara-Türkiye

Hypotensive Shock after Tongue Piercing: Case Report

Introduction - Tongue piercing is a common practice that has been linked to complications ranging from trauma to the teeth and oral mucosa to life-threatening infection or airway obstruction. A patient with hypotensive collapse caused by hemorrhage after tongue piercing is reported.

Case Report - A 19-year-old woman underwent tongue piercing and placement of a barbell. She experienced continuous bleeding and collapsed 4 hours after the procedure. An ambulance crew removed the stud, applied pressure to the tongue, and administered fluid resuscitation. In the emergency department, the patient's blood pressure was 82/41 mm Hg, pulse was 88/min, and hemoglobin was 11.0 g/dL. The tongue piercing was noted to be slightly left of midline. The patient was able to leave the hospital the next day, having to undergo iron replacement therapy and antibiotic prophylaxis with amoxicillin and metronidazole.

Discussion - Bleeding is one of many potential complications of tongue piercing. Fortunately, complications of this common procedure are rare. The authors call for inspection and licensing of tongue piercing studios, which should provide customers with written aftercare instructions.

Clinical Significance - This case report suggests some precautions for patients undergoing tongue piercing, including what to do in case of prolonged bleeding.

Hardee PSGF, Mallya LR, Hutchinson IL: Tongue piercing resulting in hypotensive collapse. *Br Dent J* 188: 657-658, 2000

Reprints available from PSGH Hardee, Dept of Oral and Maxillofacial Surgery, Barts & The London NHS Trust, Whitechapel, London E1 1BB

New Product Achieves Tooth Whitening without Trays

Introduction - Tooth whitening is a common and usually well-tolerated procedure. Some patients may be unable to tolerate the use of a tray because of occlusal interference, jaw pain, gagging, or bruxing. The author reports on a new product for tooth whitening that doesn't require trays.

Nontray Tooth Whitening - The product, called Crest Whitestrips, consists of polyethylene strips impregnated with 5.3% hydrogen peroxide. The patient applies the strips to the teeth twice daily for 30 minutes. Enough strips are supplied for 14 treatment days for the mandibular and maxillary teeth. After brushing the teeth, the patient opens the package and positions a strip over the front teeth. The top of the strip is aligned with the gumline; the bottom is folded up to the back side of the teeth. Clinical trials of the Whitestrip system are underway. The author presents 2 cases that showed good

clinical whitening after the recommended 14 days of treatment.

Discussion - Crest Whitestrips are a promising new option for tooth whitening that eliminates the need for trays. This technique will be useful for "touch-up" of already whitened teeth or as an alternative to trays for patients who cannot tolerate or afford tray treatment.

Clinical Significance - The results of clinical trials of this nontray alternative for tooth whitening will soon be available.

Kugel G: Nontray whitening. *Compend Contin Educ Dent* 21: 524-528, 2000

Reprints not available

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Subgingival Polishing versus Conventional Scaling: Pilot Study

Introduction - The authors have previously reported the development of a Teflon-coated sonic scaler insert for subgingival polishing, which removes plaque without damaging the tooth substance. The plaque-removing efficacy of these inserts appears nearly as good as that of conventional sonic scaler inserts. The inserts were used in a study comparing subgingival polishing versus conventional scaling in achieving resolution of gingival inflammation.

Methods - The study sample comprised 10 patients with moderate to advanced periodontal disease, mean age 46 years. All patients had at least 2 single-rooted teeth with probing depths of more than 6mm. Single-rooted teeth in each quadrant underwent 2 instrumentation episodes, with the second episode carried out 3 months after the first. The treatments consisted of curette followed by curette; curette followed by Teflon-coated sonic scaler; Teflon-coated sonic scaler followed by Teflon-coated sonic scaler; or an untreated control condition. Final evaluations were performed 3 months after the second treatment, including probing depths, attachment levels, bleeding on probing, and plaque scores.

Results - After the first instrumentation episode, all 3 active treatment groups showed improvements in probing depth attachment level, and bleeding scores, compared with the

untreated control group. There was no additional improvement after the second instrumentation episode. Measures of efficacy were likely lower after subgingival polishing with Teflon-coated inserts, compared with conventional scaling.

Discussion - Used for subgingival polishing, the new Teflon-coated inserts approach the effectiveness of conventional scaling for patients with periodontal disease. The continued promising results of subgingival polishing warrant additional study.

Clinical Significance - With further evaluation, subgingival polishing may become a good choice for maintenance therapy of residual periodontal pockets.

Kocher T, König J, Hansen P, et al: Subgingival polishing compared to scaling with steel curettes: A clinical pilot study. *J Clin Periodontol* 28: 194-199, 2001

Reprints available from T Kocher, Abteilung Parodontologie in der Poliklinik für Zahnerhaltung, Parodontologie und Kinderzahnheilkunde, Zentrum für Zahn-, Mund-, und Keiferheilkunde, Rotgerberstr 8, 17 487 Greifswald, Germany; fax: +49 3834 867171; e-mail: kocher@mail.uni-greifswald.de

Abstracts from the Journal of Dental Research

In the May/June 2001 issue of *Probe*, we published 32 abstracts from the International Association of Dental Research (IADR)'s *Journal of Dental Research*, Volume 80, issue 1. These were just a fraction of the almost 2,000 abstracts presented at the March 2001 conference of the American branch of the IADR, the American Association for Dental Research (AADR). We are fortunate to be able to provide more abstracts in this issue to help keep you up to date with the current research.

PERIODONTOLOGY

BACTERIAL SPECIES AND PHYLOTYPES IN NECROTIZING ULCERATIVE PERIODONTITIS.

M.K. RUSSELL,* T. ALPAGOT, S.K. BOCHES, J.L. GALVIN, F.E. DEWHIRST, and B.J. PASTER (The Forsyth Institute, Boston, MA & The University of the Pacific, School of Dentistry, San Francisco)

Necrotizing ulcerative periodontitis (NUP) is a painful and potentially debilitating affliction that affects about 1% of HIV+ subjects. The immunocompromised host is clearly prone to bacterial infection. NUP may be caused by specific microorganisms that are presently unknown (and likely "uncultivated") or by microbial species not usually thought to cause periodontal infections. NUP was defined by the presence of ulceration of one or more interdental papillae in HIV+ subjects with at least 8 sites with pocket depths > 4 mm and 6 sites with attachment level > 3 mm. 16S rDNA bacterial genes from DNA isolated from subgingival plaque of 4 NUP subjects were PCR-amplified and cloned into *E. coli*. The sequences of cloned inserts were used to determine species identity or closest relatives by comparison with known sequences. In sequence analysis of over 200 clones (~50/subject), 58 species or phylotypes were detected. The putative periodontal pathogens, e.g., *P. gingivalis*, *B. forsythus*, and *T. denticola*, were not detected. Species or phylotypes common to at least 3 of the 4 subjects were *Bulleidia extracta*, *Dialister spp.*, *Fusobacterium spp.*, *Streptococcus spp.*, and *Veillonella spp.* The subgingival microbiota of NUP lacks the classical periodontal pathogens, but instead possess novel or "unusual" species. Clinical studies using 16S rRNA-based DNA probes will be performed to determine the association of specific species or phylotypes with NUP, other oral diseases, and health. These data may provide us insight as to key species involved in the pathogenesis of other periodontal diseases. Supported by NIDCR grant DE-I 1443.

SCALING

COMPARISON OF THE EFFECTIVENESS OF SCALING AND ROOT PLANING IN VIVO USING HAND VS. ROTATORY INSTRUMENTS.

S. DIBART*, D. CAPRI, P. CASAVACCHIA, T.E. VAN DYKE; Z. SKOBE (Boston University and The Forsyth Institute, Boston, MA).

The effective removal of plaque and calculus from diseased root surfaces has always been the goal of initial periodontal therapy. Several types of instruments have been used to achieve that goal. Hand instrumentation as well as sonic or ultrasonic devices have been tested repeatedly with various outcomes. The purpose of the present investigation was to compare the effectiveness of a scaling burr to the conventional Gracey curettes, in vivo. Five patients with severe chronic periodontitis were enrolled in the study. Ten teeth that were to be extracted were selected. Each tooth was divided in 2 working sides (mesial and distal), one side was scaled with a Gracey curette, the other side with a burr. Scaling was completed when the operator achieved a smooth "glass-like" surface. The teeth were then extracted, rinsed thoroughly and put in 10% formalin to fix overnight. The teeth were then dehydrated, coated and examined with scanning electron microscopy. **Hand Instruments:** At low magnification, the scaled surfaces appear smooth, uniformly flat, with visible strokes left by the curettes, some tubuli showing. At high magnification, the scaled surfaces presented with remnants of collagen fibers, smear layer and visible dentinal tubules. The presence of bacteria in small lesions (10 microns) was noted.

Burr scaling: At low magnification, the scaled surfaces seemed much more irregular, with visible marks left by the burr. More tooth structure was removed. At high magnification, the scaled surfaces appeared clean, with complete removal of cementum.

Conclusions: The burr is more effective in removing hard tissues and eliminating microscopical root lesions that were hosting a high number of residual bacteria. Unfortunately because of the aggressive nature of the process, an increase in dentinal hypersensitivity and patient discomfort following debridement is to be expected.

PERIODONTOLOGY

PERIODONTAL ASSESSMENT OF PATIENTS UNDERGOING ANGIOPLASTY FOR THE TREATMENT OF CORONARY ARTERY DISEASE.

A. BAZILE,* N. BISSADA, B. SIEGEL, R. NAIR (Case Western Reserve University, Cleveland, Ohio)

The purpose of this cross sectional study was to assess the periodontal condition of subjects with severe coronary artery disease (CAD) as compared to subjects without heart disease. Eighty patients were recruited from the Cleveland University Hospitals, Division of Cardiology (age 23-83, median age 54). Upon cardiac catheterization, fifty were diagnosed with severe CAD (experimental group) and thirty with no angiographic evidence of CAD (control group). Those diagnosed with severe CAD were divided into three subgroups: Acute infarction (n = 20), stable angina (n = 20), and unstable angina (n = 10). The dental, medical, and social histories recorded included: The number of dental visits/year, frequency of brushing/day and flossing/week, tobacco use, presence/absence of hypertension, diabetes, total cholesterol level and the highest level of education completed. A periodontal examination was performed on each subject including: Plaque index (PI), gingival index (GI), bleeding on probing (BOP), probe depth (PD), clinical attachment level (CAL), and number of missing teeth. Logistic regression analysis was used to determine any associations between periodontal parameters and CAD. The confounding factors for the present study were found to be age and gender (male). The periodontal condition of the eighty subjects was clinically diagnosed as gingivitis or early periodontitis. The results of this study showed a statistically significant association between BOP, GI and CAD, specifically in those subjects with acute infarction. No significant associations were found between PD, CAL, number of missing teeth, dental/medical histories and CAD. It can be concluded from this limited study that gingival inflammation may be considered a significant risk factor for CAD than previously reported.

CARIES

ROOT SURFACE CARIES DEVELOPMENT IN VITRO ADJACENT TO GLASS IONOMER RESTORATIVE MATERIAL.

J. Hicks*, C. Flaitz (Texas Children's Hospital, Baylor College of Medicine, University of Texas-Houston Health Science Center-Dental Branch, Houston Tx.)

The purpose of this laboratory study was to evaluate *in vitro* root surface caries development adjacent to glass ionomer restorative material. Permanent mandibular molars (n = 10) with intact, caries-free mesial and distal root surfaces underwent soft tissue debridement and fluoride-free prophylaxis. Glass ionomer (Ketac-Fil Aplicap, ESPE) was placed in cavity preparations (1 mm diameter, 1 mm depth) in both mesial and distal root surfaces. Acid-resistant varnish was placed, leaving the glass ionomer restoration and an exposed sound root surface window extending toward buccal and lingual surfaces. The specimens were stored in deionized-distilled water at 37°C for 48 hours. Artificial lesions were created in the root surface windows (2.2 mM Ca, 2.2 mM PO₄, 50 mM acetic acid, pH 4.25). Longitudinal sections were taken at 0.5 mm, 1 mm, 2 mm and 4 mm from the margins of the glass ionomer restorations. Polarized light photomicrographs of the root surface lesions while imbibed in water were taken. Mean lesion depths were determined by projecting the photomicrographs onto a digitized tablet and measuring lesion depth at 10 points along the advancing lesion front.

Mean Lesion	0.5 mm	1 mm	2 mm	4 mm
Depths (n = 20)	139 ± 12 μm	173 ± 21 μm	232 ± 27 μm	292 ± 23 μm

(P < 0.05: 0.5mm vs 1mm, 2mm, 4mm; 1mm vs 2 mm, 4mm; 2mm vs 4mm; ANOVA, DMR)

Caries resistance to a continuous *in vitro* cariogenic attack is enhanced in root surfaces at considerable distances from the margins of glass ionomer restorations. Glass ionomers may protect adjacent and remote exposed root surfaces from caries development, and potentially improve the likelihood of remineralization of hypomineralized root surfaces and incipient root surface lesions.



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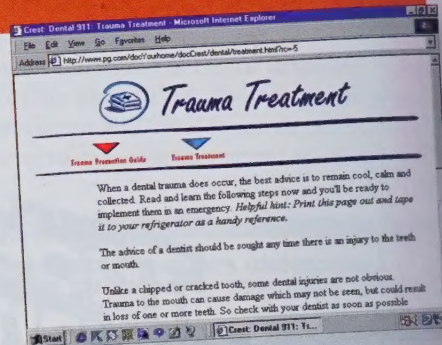
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PROBING THE NET

by Karen Wolf, DipDH

Autumn is here, and we are once again heading into a busier and more scheduled time of year. I hope you had a restful summer with family, friends, and fun filling the days, making enough memories to keep you warm for the rest of the year.



Fifty years ago, the Internet did not exist and we went to the library to research our questions. But now the Internet is a knowledge resource that almost anyone can use—clients can check out for themselves health conditions and new advances on a huge number of sites. Yes, there is much on-line we want to avoid, but there are also now many more credible and worthwhile sites than when I first began this column. However, sifting through all the “stuff” can be time consuming and it's sometimes quite difficult for clients to assess the credibility of a site. So I make a list of good, educational resources and write their web addresses on the business card I give to clients. That way, if they have any further questions, they can call me and we can discuss them.

So here's a challenge for you: Start compiling your own list for your clients. Below are a few addresses to get you started:

Cosmetic dentistry: Patients are always asking me questions about this and sites with FAQs (frequently asked questions) are great resources. For example, with regard to tooth whitening, check out <<http://idg.orn.com/blchfaq.html#>>. For bonding FAQs, try <<http://idg.orn.com/bond.html>>.

Dental emergencies: With a hectic time of year for athletes coming up, many parents go into the season unprepared for any type of dental emergency associated with sports. Sports Dentistry Online has a very good site on the correct treatment for the avulsed permanent tooth at <www.sportsdentistry.com/tooth.htm>.

A pediatric dentist, Dr. Prieto, has developed a one-page, easily reproducible, fact sheet on first aid for dental emergencies on his homepage at <www.miamismiles.com/first_aid_dental_emergencies.htm>.

For dental 911, contact the Crest web site with its trauma treatment and prevention guide at <www.pg.com/docYourhome/docCrest/dental/treatment.html?rc=-5>.

If you have any favourite “patient resource” sites you would like to share with your colleagues, send them to me at <rwolf@auracom.com> and I'll publish them in a later article.

Until next time. ☺

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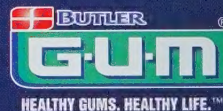
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NEW PRESIDENT WITH THREE CHALLENGES

BY BARBARA GIBB, RDH

Ellie Rubin, a keynote speaker at this year's CDHA conference, challenged us to become risk takers. When we take on something new that makes us hesitate or frightens us a bit, our creativity is stirred up and inner resources emerge that we never knew existed.

Well, here is my challenge. In succeeding Salme Lavigne as president of CDHA, I know I have a tough act to follow. Those who know Salme will agree that not only does she have tough shoes to fill, she has many of them. (This can also be said literally, as anyone who has seen Salme's shoe wardrobe can confirm!) Salme's expertise and accomplishments as a director, teacher, administrator, presenter, and researcher are internationally renowned. I am very much a "wet-glove" hygienist and have been for over a quarter of a century. I can feel more comfortable accepting the position of president, knowing I have her as a mentor and access to the diverse experience and expertise of CDHA Board members and of our Executive Director, Susan Ziebarth, and her staff.

The challenges I see for the CDHA Board are in three areas: developing leadership, educating the members about the social capital benefits of belonging to the association, and ensuring CDHA is viewed as a valuable and user-friendly organization.

I believe we must foster an environment for leadership development so that we are prepared to accept tomorrow's challenges. At national conferences, CDHA provides a forum for provincial presidents to share information, successes, and concerns. A perennial challenge in numerous provinces is identifying new volunteers willing to take on a task or a leadership position. From my interactions with many of you at the conference, I am convinced there are many potential leaders among us.

Membership in your professional association is an investment in your social capital—the connections we have with one another. It is building a network you can access to find help or answers on numerous issues including public awareness, self-governance, portability, access for dental health consumers, and opportunities for advanced education and research for and by dental hygienists.

*"NEW PRESIDENT WITH THREE CHALLENGES"
... continued on page 214*



LES TROIS DÉFIS DE LA NOUVELLE PRÉSIDENTE

PAR BARBARA GIBB, HDA

Ellie Rubin, conférencière principale à la conférence de l'ACHD, cette année, nous a lancé le défi de devenir des personnes qui prennent des risques. Lorsque nous nous attaquons à quelque chose de nouveau qui nous fait hésiter ou nous effraie un peu, notre créativité est alors sollicitée et des ressources intérieures, jusque là inconnues, viennent à la rescousse.

Hé bien! voici mon défi personnel. Je suis bien consciente que succéder à Salme

Lavigne, à la présidence de l'ACHD, représente une entreprise difficile. Celles qui connaissent Salme conviendront que, non seulement il est difficile de se retrouver dans ses souliers, mais encore qu'elle en a plusieurs paires. (L'expression peut aussi s'appliquer littéralement, comme peuvent en témoigner celles qui ont vu son placard!) Le savoir-faire et les réalisations de Salme comme directrice, enseignante, administratrice, présentatrice et chercheuse sont reconnus à travers le monde. Pour ma part, je suis tout à fait une hygiéniste dentaire pratiquant en cabinet, et ce, depuis plus d'un quart de siècle. Je puis me sentir plus à l'aise d'accepter le poste de présidente sachant que je l'aurai comme mentor et que j'aurai accès à l'expérience ainsi qu'au savoir-faire diversifiés des membres du conseil de l'ACHD et de notre directrice générale, Susan Ziebarth, et de son personnel.

Les défis que j'entrevois pour le conseil de l'ACHD sont de trois ordres : le développement du leadership; l'éducation des membres concernant les bénéfices de capital social découlant de l'adhésion à l'Association; et faire en sorte que l'ACHD soit perçue comme un organisme précieux et convivial.

Je crois que nous devons cultiver un environnement propice au développement du leadership pour nous préparer à relever les défis de l'avenir. Lors des conférences nationales, l'ACHD offre aux présidentes des associations provinciales un forum propice à l'échange de l'information, des succès et des préoccupations. Un défi permanent, dans plusieurs provinces, c'est d'identifier de nouvelles bénévoles qui voudront bien assumer une tâche ou un poste de leadership. À la suite de mes interactions avec plusieurs d'entre vous à la conférence, je suis convaincue qu'il y a chez nous plusieurs leaders en puissance.

*"LES TROIS DÉFIS DE LA NOUVELLE PRÉSIDENTE"
... suite à la page 236*

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CONTRIBUTORS

Leanne Carlson-Mann, DipDH, DipDT
 Carol Barr Overholt, DipDH, BD
 Karen Wolf, DipDH

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TRANSLATION AND REVISION

Laurentin Lévesque
 Jean-Louis Tanguay

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Mike Donnelly

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L'ASSOCIATION CANADIENNE
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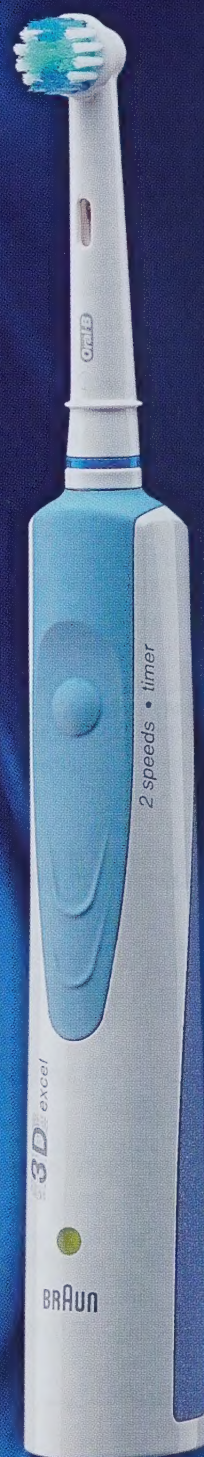
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INTERNATIONAL SYMPOSIUM ON DENTAL HYGIENE, SYDNEY, AUSTRALIA

Keynote Speech, Closing Ceremony, August 5, 2001

BY PAT JOHNSON, RDH, PHD

Editor's note:— Our guest editorial this month is by Dr. Patricia Johnson (Past President of the International Federation of Dental Hygienists). Pat has long been involved with Canadian dental hygiene; she was the seventh CDHA president (1969–1970) and is responsible for developing not only our Canadian database on dental hygienists but also our global tracking, which currently involves 22 nations and counting! As you can see from her title, Pat is one of the numbered few PhD hygienists in the country and stands as a model for some of the many accomplishments that can be achieved by dental hygienists. She was certainly an exemplary choice for keynote speaker at IFDH's 15th International Symposium on Dental Hygiene, held in Australia in August 2001. She is a genteel ambassador for Canada and our profession. Read on to hear the summary of the events in her speech at the closing ceremony. Further conference highlights will be outlined in the next issue of *Probe* by two of the participants, Sandy Cobban and Eunice Edgington of Alberta.



G'dey! And what an exciting four days we have experienced!

We leave Sydney and the 15th International Symposium on Dental Hygiene with our sense of belonging to a global community renewed, our role as a colleague and a professional more clearly defined, our scientific and technical knowledge base enhanced, and our commitment to oral health and to dental hygiene revitalized.

On behalf of all participants, I thank Sue Aldenhoven (Chair) and the other members of the Symposium Organizing Committee. They worked hard to produce the highly successful scientific and social programs we have enjoyed.

Leah Littlejohn, President of the Australian Association of Dental Hygienists (AADH), in her welcome address at the Opening Ceremony told us that the year 2001 marks several anniversaries for dental hygiene in this country. Let me assure you, AADH, that hosting this successful symposium marks yet another milestone. With approximately 600 participants and representation from 27 countries, you can take great pride in its accomplishment.

The theme of this symposium, "The Dental Team: Colleagues in Oral Health," was very timely. It captured the transition from the traditional dental-hygienist-as-auxiliary mode to one wherein the dental hygienist works in collaboration with dentists and other healthcare professionals to provide comprehensive client-centered services.

This theme was explored through an extensive and diverse scientific program. Two plenary sessions addressed clinical practice. On Friday, the evidence regarding flu-

oride toothpaste was reviewed and we can feel more confident in our recommendations for its use. On Saturday, theories and techniques for effective preventive programs tailored to children's individual development were outlined and most of us have opportunities to apply that knowledge.

These sessions were followed by a series of presentations that ran concurrently. Our challenge was to choose from among them. Presentations were organized into four main topic areas: the multidisciplinary team, total health through oral health, the impact of dental hygiene research, and educational initiatives. Subjects included clinical practice, developing populations, special care clients, and characteristics of the dental hygiene population. The scientific program was augmented by a wide variety of exhibits that provided additional opportunities for learning. It was a stimulating smorgasbord of papers, posters, and workshops and we sampled broadly.

The social program was outstanding, wasn't it? It took advantage of the marvelous venue—Sydney and, in particular, the Darling Harbour area. We remarked on the beauty, cleanliness, friendliness of people we encountered, and feeling of security as we moved freely around the harbour to the various social events.

The Opening Ceremony and following Welcome Reception, sponsored by Colgate, set the pace. We were welcomed warmly by IFDH and DHAA officials. With the evocative presentation by John Moriarity, we gained insight into a key facet of Australian culture; that image of the airplane painted with aboriginal symbols and the accompanying music will long remain in my heart and my head. The international element was expressed in that stirring *parade of countries* when delegates of the member countries of the International Federation of Dental Hygienists carried their nations' flags onto the stage. Although I have attended these international symposia since the early 1980s, I never fail to be impressed.

The following evening was the Captain Cook Dinner Cruise, preceded for some by the President's Reception. Last evening, of course, was that magnificent Gala Dinner, sponsored by Oral-B. The venue and the food were excellent and the music ... Well, did anyone here not get up and dance?

I have mentioned the support of the two major sponsors—and their support extended to other aspects of the symposium as well. In addition, we have other sponsors to thank, for example, for the forums, luncheons, and printed programs. There is a symbiotic relationship between the dental hygiene profession and the oral healthcare industry; we rely on them for products, services, and support to provide quality care. Their contributions at this symposium added greatly to our learning, dialogue, and enjoyment.

As this 15th Symposium draws to a close, I am reminded of my vision for dental hygiene, articulated at the 1989 symposium as incoming IFDH President and shared, I know, by others. This vision (and I quote myself)

“views the dental hygienist as a colleague and partner, working in collaboration with other healthcare professionals and the public to achieve our shared goal of improved oral health as part of total health. This vision includes dental hygiene assuming responsibility for its own future, a responsibility that involves:

1. delineating dental hygiene's changing role in health promotion and the delivery of services;
2. providing for sound education to prepare dental hygienists for those roles and ensure quality of services;
3. regulating the supply and conduct of practitioners to assure competence and efficient use of resources;
4. collaborating with professional, consumer, corporate and other interest groups in planning for and providing effective services; and lastly,
5. advocating in the public's and the profession's interests.”

Collectively, we have been making steady progress toward that vision first articulated 12 years ago. Three years later at the Opening Ceremony of the 12th International Symposium, which was held in the Netherlands, Arien Van Herk, Chair of the Organizing Committee, referred to that same vision when she outlined the theme for that meeting, “The Dental Hygienist: From Auxiliary to Colleague.” And now we have worked together for the past four days under the theme “The Dental Team: Colleagues in Oral Health.”

Those of you who were able to attend my presentation on Friday know that I have been tracking dental hygiene's evolution globally since 1987. We now have 22 nations in the database. In recent years, there have been exciting trends and changes in the profession. Overall, changes are consistent across most nations—the profession remains remarkably homogeneous. As you likely found in speaking with symposium participants from other countries, we are more similar

than dissimilar in terms of education, work settings, and professional organization. Trends in education include a shift from a diploma to a baccalaureate entry-level program to better prepare dental hygienists for their new roles and increased scopes of clinical practice and workplace responsibilities.

Trends and changes in regulation have been noteworthy. For the vast majority of the 22 nations surveyed, there has been a lessening in requirements for work supervision and a concomitant increase in professional autonomy and decision making responsibility. Collaborative practice (whereby the dental hygienist and the dentist together decide the dental hygiene services to provide and the dentist need not be present when intraoral procedures are performed) was reported for 10 countries. Independent practice (whereby the dental hygienist decides all procedures in collaboration with the client and refers the client to a dentist or other healthcare provider as required) was reported for seven nations. In contrast, direct supervision (whereby the dentist decides the procedures and must remain on-site during treatment) has declined markedly. It was reported to be the only method for five countries, four of which are located in the South Pacific, namely, Australia, Hong Kong, Japan, and New Zealand, plus Austria where dental hygiene is just being established. Not unexpectedly, changes in work supervision have tended to occur in countries where dental hygienists have attained greater responsibility for self-regulation, either directly or through a government agency, whereas change has occurred more slowly where dental hygienists are regulated through a dental board.

Another noteworthy trend is the dramatic increase in the numbers of dental hygienists, especially compared with increases in population size and in numbers of dentists for those same countries. There are now over 350,000 dental hygienists across the 22 nations surveyed. While dental hygienists' services have become more available, the challenge now is to make them more accessible, in particular to currently under-served populations—a task that typically requires changes in legislation.

In reviewing trends and changes in dental hygiene, it is apparent that steady progress is being made toward attaining that vision of dental hygiene. We see also that the rate of progress varies among nations and that we can learn from each other. As we examine the methods and circumstances whereby dental hygienists in other countries have been successfully “writing their own futures,” we more readily accomplish our own goals. Remember the words of Til van der Sanden-Stoelinga (IFDH President) in her remarks to us four days ago at the Opening Ceremony? “Be politically active! Let it be known who you are!”

As we take our leave to depart for our respective homelands, let us take a moment to celebrate dental hygiene—a large, global, and remarkably homogeneous community of professionals that has a vital role in achieving improved health for all!

What a marvelous cheer! See you in Spain in 2004! 

P R E S S R E L E A S E

Barbara Gibb Elected President of the Canadian Dental Hygienists Association

October 20, 2001 - The Canadian Dental Hygienists Association is pleased to announce that Barbara Gibb was elected President of the Board of Directors of CDHA.

Following graduation from the dental hygiene program at the University of Toronto in 1975, Ms. Gibb practised in the Waterloo Wellington district for 17 years and is currently in general practice in Baie d'Urfé, Quebec. She has been very active in both of her professional associations, serving in numerous capacities. In the Ontario Dental Hygienists' Association, she was newsletter editor (1989-93), president (1994-95), and Board chair (1995-98). In the Canadian Dental Hygienists Association, she has served as director representing Ontario since October 1998 and was president-elect in 2000-01. In addition, she was a pioneer in the field of self-employed dental hygienists in 1977-84 and received the ODHA Distinguished Service Award in 1996 for contributions and outstanding service to the Association and the profession of dental hygiene.

C O M M U N I Q U É

Élection de Madame Barbara Gibb à la présidence de l'Association canadienne des hygiénistes dentaires

Le 20 octobre 2001 - L'Association canadienne des hygiénistes dentaires a le plaisir d'annoncer l'élection de M^{me} Barbara Gibb comme présidente de son conseil d'administration.

Après avoir reçu son diplôme en hygiène dentaire de l'université de Toronto, en 1975, M^{me} Gibb a pratiqué dans le district Waterloo Wellington pendant 17 ans, et elle travaille maintenant en pratique générale à Baie d'Urfé (Québec). Elle a été très active dans ses deux associations professionnelles, où elle a servi dans de nombreuses fonctions, comme rédactrice du bulletin de nouvelles de l'Association d'hygiène dentaire de l'Ontario, de 1989 à 1993, présidente, en 1994/95 et présidente du conseil en 1995/98. Au niveau de l'Association canadienne des hygiénistes dentaires, elle a servi comme administrateur représentant l'Ontario, depuis octobre 1998, et présidente élue en 2000/01. En plus, elle a été l'une des pionnières du travail autonome des hygiénistes, de 1977 à 1984, et elle a reçu, en 1996, le prix ODHA Distinguished Service Award pour contributions et service distingué à l'Association et à la profession de l'hygiène dentaire.

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MEMBERSHIP UPDATES**HAVE YOU JOINED YET?**

Membership renewal forms were sent the beginning of September by 1st class mail. If you have not received one yet, please contact CDHA at 1-800-267-5235.

Remember that Alberta, British Columbia, Ontario, and Saskatchewan require proof of Malpractice Insurance coverage as a pre-requisite to licensure. CDHA provides this coverage as a benefit of active membership. Join today to receive your copy of the insurance policy.

MEMBER PROFILE

The times are changing and so is the dental hygiene profession. In the past 20 years, we have seen the association grow from 2,000 to over 10,000 members at present. We helped four provinces become self-regulated. We've seen dental hygienists open their own practices in British Columbia and those who go into their own communities and health care facilities and administer oral hygiene. How exciting and proud you all must be to be dental hygienists in these changing times.

Well, CDHA is excited about these new developments too. We are continually striving to provide benefits to our members that will complement these changes, but we need to know what you need to facilitate your practice. Thus the NEW application and member profile.

CDHA would like to thank everyone who returned their membership application with their payment and also those who took the time to complete the four-page member profile. It is only through the feedback of our members that CDHA is able to evaluate how best to meet your needs. With this

information, we can determine what areas to focus on to ensure that our members have all the necessary benefits to move them forward in their practice. Do you want more interaction with colleagues through chat lines on the Internet? Do you want more information on certain topics that may not be dealt with at the moment? What kind of information do you want to have access to? What volunteer expertise and resources can CDHA tap into so we can recruit qualified people to sit on committees and task forces or offer opinions on subjects that interest them?

Some members found the application confusing. Your comments have been noted and changes will be made accordingly to next year's application.

For anyone who has not yet joined and who believes the fees have increased dramatically, please disregard Section "C" unless you wish to belong to more than one province.

RETIREES

Are you considering retiring from the profession of dental hygiene?

CDHA has negotiated for a clause to be included in the Malpractice Insurance policy to provide coverage for all prior acts, indefinitely, to all members of the CDHA who retire from the profession.

You will not have to continue membership with the CDHA each year in order to maintain coverage for prior acts. Simply provide us with written notification of the date on which you have officially retired from the profession and a certificate of coverage will be forwarded. You may also request that your name be removed from the database at this time, if you so choose. 

PRESENTATION TO THE HOUSE OF COMMONS STANDING COMMITTEE ON FINANCE

**Pre-Budget Consultations,
October 2, 2001**

**BY SUSAN A. ZIEBARTH,
CDHA, EXECUTIVE DIRECTOR**

The Canadian Dental Hygienists Association would like to thank the House of Commons Standing Committee on Finance for the opportunity to appear before it and take part in this year's pre-budget consultations.

Our association represents the voice of Canada's 14,000 dental hygienists. The association serves the public by developing national positions and standards related to dental hygiene practice, education, research, and regulation. In 1988, the federal government identified "dental hygienists as the only health professionals whose primary concern is the prevention of oral disease."

Good oral health is key to the social and economic well-being of Canadians. As a first point of contact in the oral health system, dental hygienists assess, plan, and implement preventive care. A serious lack of access to preventive oral care is evident for those who experience a low socio-economic status; limited access due to physical disability, illness, distance from services and lack of, or restrictive, dental insurance plans.

*"PRESENTATION TO THE HOUSE OF COMMONS STANDING
COMMITTEE ON FINANCE" ... continued on page 214*

PRÉSENTATION AU COMITÉ PERMANENT DES FINANCES DE LA CHAMBRE DES COMMUNES

**Consultations prébudgétaires,
le 2 octobre 2001**

**PAR SUSAN A. ZIEBARTH
DIRECTRICE GÉNÉRALE DE L'ACHD**

L'Association canadienne des hygiénistes dentaires aimerait remercier le Comité permanent des Finances de la Chambre des Communes de l'occasion qui lui est donnée, cette année, de comparaître devant lui et de participer aux consultations prébudgétaires.

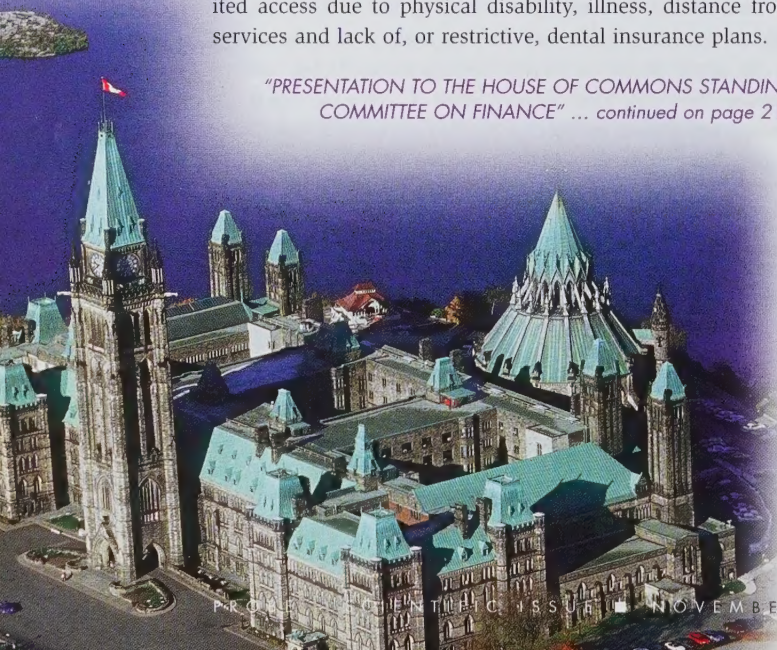
Notre association est le porte-parole des 14 000 hygiénistes dentaires du Canada. L'association dessert le public en élaborant

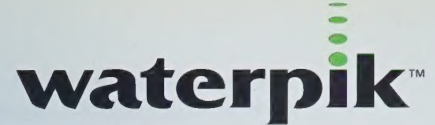
des positions et des normes nationales ayant rapport à la pratique, à l'enseignement, à la recherche et à la réglementation de l'hygiène dentaire. En 1988, le gouvernement fédéral avait identifié « les hygiénistes dentaires comme les seuls professionnels de la santé dont la préoccupation principale est la prévention des maladies buccales ».

La bonne santé buccale est essentielle au bien-être social et économique des Canadiennes et des Canadiens. Étant l'un des premiers points de contact dans le système de la santé buccale, les hygiénistes dentaires évaluent, planifient et mettent en œuvre des soins préventifs. Il est évident qu'il y a un manque grave d'accessibilité aux soins buccaux préventifs pour ceux qui souffrent d'un état socio-économique faible, d'une incapacité physique, qui sont malades ou éloignés des services, ou en raison d'un manque de programmes d'assurance dentaire ou des restrictions de ces programmes.

En mai 2000, le Directeur du Service de santé publique des États-Unis a publié un rapport sur la santé buccale qui a fait étape. Ce rapport alerte les « Américains relativement à la pleine signification de la santé buccale et de son incidence sur la santé et le bien-être en général ». Cet avertissement revêt une égale importance pour les Canadiens et leurs gouvernements, pour assurer le rôle du Canada au rang des acteurs importants. Les maladies périodontiques sont liées aux grands problèmes de santé dont les maladies du cœur, les accidents cérébrovasculaires, les

*"PRÉSENTATION AU COMITÉ PERMANENT DES FINANCES DE LA
CHAMBRE DES COMMUNES" ... suite à la page 215*





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In May 2000, the Surgeon General of the United States released a groundbreaking report on oral health. This report alerts "Americans to the full meaning of oral health and its importance in relation to general health and well-being." This warning is equally important for Canadians and their governments to ensure Canada's role as a major player. Periodontal diseases are linked to major health problems including heart disease, stroke, respiratory diseases, osteoporosis, and diabetes. Unless our health care services and the way we deliver them are refocused on preventing illness rather than just treating it, Canadians will be stuck in a spiral of increasing public expenditures with no real solution to our health needs. The ultimate recommendation the Canadian Dental Hygienists Association could make would be to include oral health services in Medicare. In the light of the current economy and fiscal reality, we would suggest as a first step to fund categorical public insurance programs in populations of greatest risk, for example, school programs for children or oral health programs for the elderly or institutionalized. Specifically, we recommend that the 2.2 billion dollars earmarked for early childhood development include preventive oral health care measures.

Despite numerous surveys showing that a significant portion of the population does not have access to preventive oral care services, policy makers have still not taken effective steps. We concur with our colleagues at the Canadian Healthcare Association that ensuring access to health services on the basis of need and not ability to pay is essential. If policy makers wish to provide equal opportunity to succeed, then we must recognize that those who can benefit the most from oral

health care services are the ones least likely to have access and who most likely will have problems that lead to serious medical conditions beyond the mouth. The CDHA recommends that the federal government work with provincial governments to support programs and policies that will equalize access to affordable oral health care. As an example, an examination of the current medical/dental tax credit reveals that such a high deductible is useful only for major medical conditions and does not encourage illness prevention.

Canada could enhance its competitive economic position through better health care. The 1998 spring issue of Statistics Canada's *Perspectives on Labour and Income* indicated a serious lack of productivity in the Canadian workforce due to absenteeism. Most of this absenteeism is due to poor health. Missing and unfilled teeth mean pain, loss of sleep, poor performance, low self-esteem, and cause difficulties in both getting and keeping a job. Periodontal disease is the most prevalent chronic disease so it is no surprise that the state of the population's oral health affects workplace productivity. We recommend that the federal government encourage its provincial and territorial partners to remove restrictive regulations, where they exist, which deny Canadians direct access to dental hygienists' services. This proactive reform of service delivery will improve access to professional care and reduce health care costs both in service delivery and through reduction of future incidence of illness and treatment.

The federal government can lead by example and improve access to preventive oral health care services for the Public Service Dental Care Plan and Pensioner's Dental Services Plan members by directing their plan insurers to delete the words "under direct supervision of a dentist". The Pensioner's Dental Service Plan is the only program administered by Sun Life that retains this inappropriate restriction.

Access to preventive oral care services must be improved if Canada wants to ensure a national competitive advantage. A healthy workforce is productive and competitive and one that practises good oral hygiene. We know that the dental hygienists' goal of contributing to the well-being of all Canadians is one that is shared by members of the House of Commons Standing Committee on Finance. We would like to conclude by thanking you for allowing us to present on behalf of the Canadian Dental Hygienists Association. 

Call for Potential Members

for the *Probe* (Scientific Issues) Advisory/Reviewer Group

Individuals interested in joining the *Probe* (Scientific Issues) Advisory/Reviewer Group should be well versed in scientific writing and have a master's degree or beyond. Members are expected to review several manuscripts per year in a timely fashion and participate in on-line communication with the Scientific Editor.

Marilyn Goulding, Scientific Editor, invites potential candidates to contact Frances Patterson, CDHA Executive Assistant, at 1-800-267-5235 or <info@cdha.ca>.

"NEW PRESIDENT WITH THREE CHALLENGES" (continued from page 203)

I will strive to have CDHA viewed as a user-friendly organization. I want to see you, the members, using CDHA as an essential part of the profession of dental hygiene. CDHA has a small but very capable, dedicated staff who operate with ten provincial systems, two official languages, and six time zones. We must accommodate the provincial differences in the profession: varied educational programs, scopes of practice and governance. All of these can have an effect on dental hygiene across Canada.

Board members attended the CDHA conference in Mississauga in September, giving a face and voice to your Board. I hope you shared your issues and concerns with them at the various sessions, from the panel on baccalaureate education to the Town Hall forum. I encourage you to do this at any time, on any issue. CDHA needs your input and support to set the priorities and policies that will reflect the collective voice and vision of dental hygiene in Canada in order to advance the profession in support of you, the members, and to contribute to the health and well-being of the public. Such is our exciting challenge. I look forward to hearing from you. 

maladies respiratoires, l'ostéoporose et le diabète. À moins que nos services de soins de santé et la façon dont nous les rendons ne soient réorientés sur la prévention de la maladie plutôt que sur son seul traitement, les Canadiennes et les Canadiens seront enfermés dans une spirale d'augmentation des dépenses publiques sans que des solutions réelles soient apportées à nos besoins de santé. La recommandation fondamentale que l'Association canadienne des hygiénistes dentaires pourrait faire serait d'inclure les services de santé buccale dans le régime d'assurance-maladie. À la lumière de l'économie actuelle et de la réalité fiscale d'aujourd'hui, nous pourrions suggérer, comme première étape, de financer des programmes d'assurance publics catégoriques destinés aux populations qui sont plus à risque comme, par exemple, des programmes pour les enfants en milieu scolaire ou des programmes de santé buccale pour les aînés ou les personnes institutionnalisées. Plus spécifiquement, nous recommandons que les 2,2 milliards de dollars réservés au développement de la petite enfance incluent des mesures de soins préventifs en santé buccale.

Malgré de nombreux sondages montrant qu'une importante portion de la population n'a pas accès à des soins préventifs en santé buccale, les responsables des politiques n'ont toujours pas pris des mesures efficaces. Nous sommes d'accord avec nos collègues de l'Association canadienne des soins de santé sur le fait qu'il soit essentiel d'assurer l'accès aux services de santé sur la base des besoins et non sur la capacité de payer. Si les décideurs désirent offrir une égalité des chances de réussite, il faut dès lors reconnaître le fait suivant : ceux qui peuvent bénéficier le plus des services de santé buccale sont ceux qui ont le moins de chance d'y avoir accès et risquent le plus d'avoir des problèmes conduisant à des affections médicales graves, au-delà de la bouche. L'ACHD recommande que le gouvernement fédéral s'allie aux gouvernements provinciaux pour soutenir des programmes et politiques qui vont égaliser l'accessibilité à des soins de santé buccale abordables. À titre d'exemple, un examen des crédits d'impôt actuels à des fins médicales/ dentaires révèle qu'un montant déductible aussi élevé n'est utile que dans les cas d'affections médicales graves et qu'ils n'encouragent pas la prévention de la maladie.

Le Canada pourrait améliorer sa position économique concurrentielle grâce à de meilleurs soins de santé. Le numéro du printemps 1998 de *L'emploi et le revenu en perspective*, de Statistique Canada, indiquait un grave manque de productivité dans la main-d'oeuvre canadienne pour cause d'absentéisme. Cet absentéisme est dû pour une large part à une mauvaise santé. Des dents qui manquent et qui ont des cavités signifient douleur, perte de sommeil, mauvais rendement, faible estime de soi; elles causent également des difficultés à obtenir et à garder un emploi. La maladie périodontique est la maladie chronique la plus répandue, de sorte qu'il n'est pas surprenant que l'état de la santé

buccale de la population affecte la productivité au travail. Nous recommandons que le gouvernement fédéral encourage ses partenaires provinciaux et territoriaux à abroger, le cas échéant, les règlements restrictifs qui empêchent les Canadiens d'avoir un accès direct aux services des hygiénistes dentaires. Cette réforme proactive de la prestation des services améliorera l'accès aux soins professionnels et réduira les coûts des soins de santé, à la fois dans la prestation des services et par la réduction de l'incidence future de la maladie et des traitements.

Le gouvernement fédéral peut faire montre de leadership et améliorer l'accès aux services de soins préventifs en santé buccale pour le Régime de soins dentaires de la fonction publique et pour les membres du Régime de services dentaires des pensionnés en ordonnant à leurs assureurs de supprimer les mots « sous la supervision directe d'un dentiste ». Ce dernier régime est le seul programme administré par la Sun Life qui retient cette restriction inopportune.

L'accès aux services de soins buccaux préventifs doit être amélioré si le Canada veut s'assurer un avantage concurrentiel national. Une main-d'œuvre en santé est productive et concurrentielle, et en est une qui pratique une bonne hygiène dentaire. Nous savons que le but des hygiénistes dentaires — contribuer au bien-être et tous les Canadiens et des Canadiennes — est partagé par les membres du Comité permanent des Finances la Chambre des Communes. Nous aimerions conclure en vous remerciant de nous avoir permis de faire cette présentation au nom de l'Association canadienne des hygiénistes dentaires. 



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Correction: We would like to apologize for the inadvertent omission of Figure 5 in Eunice Edgington's article, "Skeletal Muscle Oxygenation and Blood Volume Trends...", in the last issue of *Probe Scientific Journal* (May/June 2001).

ORAL STATUS OF ELDERLY RECEIVING HOME SUPPORT SERVICES

BY BONNIE J. CRAIG, DIPDH, MED;
RITA C. CHU, DIPDH, BDSC (DENTAL HYGIENE);
SHIRLEY BASSETT, DIPDH, BSCD

Faculty of Dentistry,
University of British Columbia

KEYWORDS: oral health status, dental care for aged, homebound persons, frail

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ABSTRACT

Growing life expectancy has resulted in increasing numbers of elderly individuals living well into their eighties. Among the elderly population is a small but growing group of frail and functionally dependent, community-dwelling elderly individuals whose medical, physical, or cognitive impairments have more or less confined them to their own homes. Little is known about the oral health needs of these individuals. "At-home" oral examinations and questionnaires were completed for 29 participants (19 females and 10 males; median age 80 years) being assessed for In-Home Support Services. Demographic and medical information was reviewed for each participant. The oral health assessment included a visual examination for soft tissue pathology, xerostomia, periodontal health, caries, and oral hygiene, as well as prosthesis assessment. Dentate participants had a mean of 15.4 teeth per person while 45 per cent of the participants were completely edentulous. Of the dentate participants, at least 75 per cent required periodontal work, 25 per cent restorative work, and 13 per cent extractions of non-restorable teeth. At least 60 per cent of all denture wearers had ill-fitting dentures. Although oral hygiene was generally a problem, extremely poor oral hygiene was more evident in the dentate participants (50 per cent) than in the edentulous subjects (23 per cent). Education and research is needed to increase the oral health professions' awareness and understanding of the oral health needs of the community-dwelling, functionally dependent elderly. Oral health professionals need to be integrated into health care teams for the elderly and to extend their services to clients who are blocked from easy access to dental care.

(français à la page suivante)



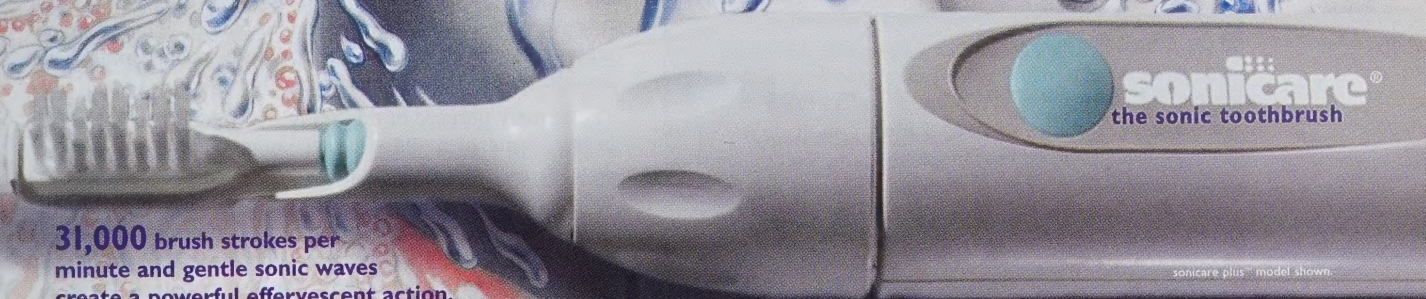
INTRODUCTION

Television, newspapers, magazines, and journals continually remind us that there are proportionately more older people in Canada and the United States today than ever before. In 1991, Canadians aged 65 and over constituted 12 per cent of the population.¹ In 2001, Statistics Canada estimates that Canadians aged 65 and over will comprise 13 per cent of the population. The most dramatic population gains have been among the 85-and-over age group and these gains are expected to continue. While it is anticipated that the population aged 65 and over in the United States will increase by 24 per cent between 1991 and 2001, the population aged 85 and over is expected to increase by 68 per cent.² Statistics Canada estimates that the 85-and-over group will increase by 79 per cent between 2001 and 2006.³

The growing life expectancy has created a number of challenges for society and for the medical and dental professions. As long as the older individual stays healthy, few problems occur. However, although normal aging is not a disease, many older individuals experience an increase in pathological conditions with advancing age. This results in higher levels of functional dependency for some elderly individuals.⁴

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References 1. Stanford CM, Srikantha R, Wu CD. *J Clin Dent.* 1997; 8:10-14 2. Tritten CB, Armitage GC. *J Clin Periodontol.* 1996; 23:641-648
3. O'Beirne G, Johnson RH, Persson GR, Spektor MD. *J Periodontol.* 1996; 67:900-908

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ABRÉGÉ

L'allongement de l'espérance de vie a eu pour résultat un accroissement du nombre de personnes âgées qui vivent jusque dans leurs 80 ans avancés. Dans la population des aînés, il existe un groupe, restreint mais de plus en plus nombreux, de personnes âgées fragiles et fonctionnellement dépendantes, vivant dans la collectivité, et dont les déficiences médicales, physiques ou cognitives les ont plus ou moins confinées à la maison. On connaît très peu sur leurs besoins de santé buccale. Des examens buccaux « à domicile » ont été faits et des questionnaires ont été remplis pour 29 participants (19 femmes et 10 hommes, âge médian de 80 ans) évalués pour les services de soutien à domicile. On a examiné l'information démographique et médicale pour chacun des participants. L'évaluation de la santé buccale comprenait un examen visuel de la pathologie des tissus mous, la xérostomie, la santé périodontique, les caries, l'hygiène buccale ainsi qu'une évaluation des prothèses. Les participants dentés avaient chacun en moyenne 15,4 dents, alors que 45 p. cent des participants étaient complètement dépourvus de dents. Chez les participants dentés, au moins 75 p. cent avaient besoin de travaux périodontiques, 25 p. cent, de travaux de restauration, et 13 p. cent, d'extraction de dents non restaurables. Au moins 60 p. cent de tous ceux qui portaient des dentiers souffraient d'un mauvais ajustement. Bien que l'hygiène dentaire ait représenté généralement un problème, une extrême pauvreté de l'hygiène buccale était plus évidente chez les participants dentés (50 p. cent) que chez les sujets dépourvus de dents (23 p. cent). Il faut de l'éducation et de la recherche pour sensibiliser davantage les professions de la santé buccale aux besoins, en ce domaine, des aînés fonctionnellement dépendants vivant dans la collectivité, et pour leur faire mieux comprendre ces besoins. Les professionnels de la santé buccale doivent être intégrés aux équipes de soins de santé pour les aînés et desservir les clients qui n'ont pas facilement accès aux soins dentaires.

In the United States, it is estimated that about five million persons over the age of 65 have limitations with at least one activity of daily living (ADL) and one self-care capability (Instrumental Activity of Daily Living).⁵ Individuals experiencing these functional limitations find it difficult to live without assistance. When older individuals experience medical, physical, or cognitive impairments that limit their functioning, some move to nursing homes. However, many continue to reside in the community with assistance from others. This assistance usually includes family, home health services, homemaker services, physical therapy, and community services such as lifeline (a telephone emergency service) and home-delivered meals.

Given its cost-containment features and the desires of seniors themselves, many policy makers have readily endorsed a model of community and home care that assists people to live independently in their own homes and communities for as long as possible. For example, the 1991 British Columbia

(Canada) Commission on Health Care and Costs recommended moving health care out of hospitals and into communities and homes.⁶ With ever-increasing numbers of elderly individuals and continuous government cutbacks, maintaining older adults in the community for as long as possible will continue to be important.

While more frail and functionally dependent elderly individuals are choosing to remain in their own homes with the assistance of medically appointed or privately hired home-based services, little is known or being done about the oral health needs of these individuals. Oral health care among the functionally frail elderly is important, as many of the illnesses experienced by the frail elderly might include or be modified by oral disease and loss of oral function.⁷ Poor oral status can also result in an altered diet, a lowered self-image, decreased social interaction,⁸ and decreased feelings of well-being.⁷

Many older individuals in the past experienced progressive loss of their teeth until the remaining few were replaced by complete dentures. However, the stereotype of the older person being toothless or wearing complete dentures is now outdated. More than 60 per cent of the population over age 65 in the United States have some remaining natural teeth.⁹⁻¹¹ The retention of the natural dentition is probably due to heightened awareness, and a subsequent increase in personal oral care and utilization of professional dental care by the elderly in general.¹²

However, it has been observed that teeth which are retained longer often become neglected in later years, resulting in poor oral hygiene and diseases of the soft and hard tissues.¹³ For each succeeding cohort of older adults, there may be a decrease in edentulism rates and a corresponding increase in the prevalence of root surface and coronal caries, and a progression of periodontal disease.¹⁴

While the institutionalized elderly are reported to have poor oral health and to be in need of dental care,^{15,16} little information is available on the dental health of the frail elderly living at home.⁴ It is known that the functional limitations experienced by the frail elderly living at home are comparable to those experienced by the institutionalized elderly and that these limitations impact negatively on oral hygiene and access to dental care.⁴ Three studies that investigated the oral health of the functionally dependent elderly living at home reported low levels of oral health and oral hygiene and a high need for restorative and prosthetic care.^{4,7,17}

The primary purpose of this study was to determine the oral health status of a little-studied population of functionally dependent elderly individuals living in a rural community as well as their perceived oral health status, their perceived dental health needs, and their dental services utilization. The role of the dental hygienist in the interdisciplinary assessment and care of the homebound elderly was also examined. In addition, this study was to benefit the participants by providing them with a personalized account of their oral health status, advice regarding oral health and oral hygiene care, samples of products, and referrals to dentists or other health care providers when necessary and appropriate.

The lack of previous investigation into the oral health status of the homebound elderly as a group made it difficult to develop hypotheses. Hence, this study is descriptive only.

METHODS

Participants for this project were clients of the Continuing Care Division of the Salmon Arm Local Health Area (LHA). This LHA contains Salmon Arm and 20 smaller communities, bringing the total population of the area to 33,133. The Salmon Arm LHA is a division of the North Okanagan Health Unit, which is a branch of the Ministry of Health and Ministry for Seniors (Government of British Columbia).

The Continuing Care Division of the Salmon Arm LHA provides a variety of in-home support services, residential care services, and special support services to assist people whose ability to function independently is affected by health-related problems. The division's services are designed to supplement rather than replace the efforts of individuals to care for themselves with the assistance of family and friends. The belief that most people wish to maintain their independence and remain in their own homes for as long as possible is central to the Continuing Care Division's philosophy.

Once a client is referred to the Continuing Care Division, a community health nurse functioning as a Continuing Care Case Manager (CCCM) carries out a detailed assessment of the client. After the assessment, either a plan is developed to facilitate better at-home functioning or the client is referred for admission to a long-term care (LTC) facility if adequate functioning is questionable. Ninety per cent of the continuing care clients are elderly.

Before starting the study, a research agreement (including an ethical review) was approved between the Continuing Care Division of the Ministry of Health and Ministry for Seniors and the University of British Columbia's Dental Hygiene Degree Completion Program. This agreement included informed consent and stated that all data collected would be considered confidential and would be reported only in aggregate form. The study examiner was a dental hygiene degree completion student supervised by both a community health nurse and by program faculty. No funds were required for this study as this project formed part of a program course assignment.

Over a four-month period after the research agreement was finalized, all elderly continuing care clients being assessed were asked by a community health nurse if they would allow a dental hygienist to perform an at-home oral assessment. The 29 participants who consented were subsequently seen in order of referral.

Prior to the at-home assessment, the following information was obtained about each participant from the CCCM's recent assessment summary: age; marital status; medical status; medication list; mental status (Mini Mental State Exam, a cognitive screening test which measures a variety of mental functions);¹⁸ hearing, vision, memory and mobility status; activities of daily living (ADL) limitations and self-care abilities; and home support services list. Educational and income information were not obtained. However, based on interactions with the participants, the examiner concluded that educational and income levels were quite varied.

At the beginning of the home visit, informed written consent was obtained from each participant. This was followed by administering a questionnaire (see Table 1) consisting of eight questions. These questions served three purposes: (1) to develop a rapport between the dental hygienist and the participant; (2) to obtain information—the participant's perceptions regarding their oral health status, their perceived need to see a dentist, and their homebound status (to be compared to the assessor's ratings in these areas), the participant's oral health practices, and the participant's method of payment for dental care; and (3) to obtain qualitative information that would complement clinical data obtained for each participant.

A simplified oral assessment method that would ensure a good experience and maximum acceptance and convenience was selected. Because these assessments were conducted in home settings, a simple approach was taken using gauze, tongue depressors, and a DenLite™ (Welch Allyn, Patterson Dental Co.), rather than standardized oral indices that require measuring instruments. A DenLite™ is a high-intensity, halogen-based, fibre optic dental mirror that provides optimal intraoral illumination. The oral assessment included a visual examination for soft tissue pathology, xerostomia, periodontal health, caries, oral cleanliness, and mouth odour, as well as prosthesis assessment when applicable. Possible oral lesions, infections, abscesses, caries, lost restorations, advanced periodontal disease or denture-related problems were noted for follow-up by the dental hygienist, or for referral to a dentist if needed, and the participant was informed. Further dental care was facilitated when appropriate and necessary.

Following the oral assessment, a daily mouth care plan was developed for, and reviewed with, each participant. If the participant had dentures, they were cleaned; if natural teeth were present, they were brushed. Samples of appropriate oral hygiene products and instruction on their use were also provided.

1. How do you rate the health of your mouth?
(poor, fair, excellent)
2. Do you think you need to see a dentist?
3. How do you feel about going to the dentist?
4. What makes it easy/difficult for you to visit the dentist?
5. When was your last dental visit?
6. How do you take care of your teeth? Do you use a mouthwash?
7. How do you pay for your dental care?
(self/personal insurance/social assistance/Veterans' Affairs/Indian Affairs)
8. Do you consider yourself homebound?

Table 1. At-home assessment questionnaire

RESULTS

Participants

An "at-home" oral assessment was performed on 29 participants. All participants were Caucasian. Fifty-two per cent of the participants lived in Salmon Arm and the remaining participants resided in the small communities around Salmon Arm (maximum distance away was 80 km).

Although it had been decided at the beginning of the study that all participants were to be 65 years of age and over, one participant aged 63 years was included because a severe stroke had left him homebound. Therefore the age range for the group was 63 to 94 years and the median age was 80 years of age.

Nineteen of the participants were female and 10 were male. Thirty-eight per cent of these elderly participants were still married; 10 per cent were single, widowed, divorced, or separated and living with a family member (caregiver); and 52 per cent were single, widowed, divorced or separated, and living alone.

All but two participants suffered from at least one chronic health condition (heart conditions, high blood pressure, arthritis, diabetes, cancer, etc.). Two-thirds were being managed for at least two conditions and almost one-third for at least three (see Figure 1). Only 10 per cent of the participants did not routinely take any medications, while 59 per cent took at least three types of medication daily (see Figure 2).

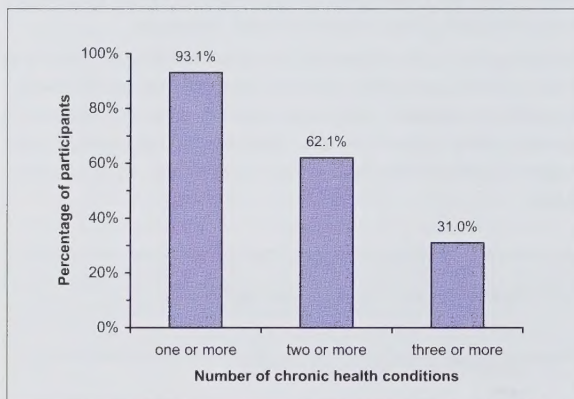


Figure 1. Chronic health conditions (CHC) affecting participants

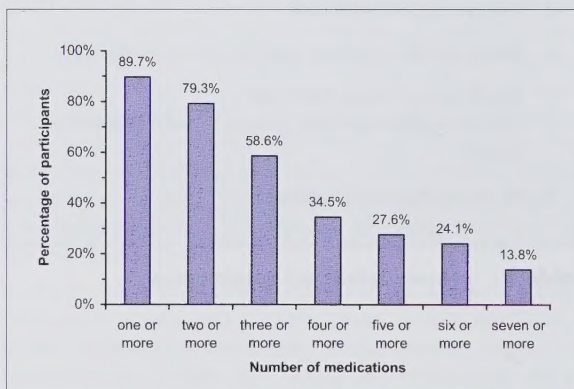


Figure 2. Number of medications taken by participants

Although the majority of the participants assessed had adequate vision (most with the aid of glasses), many experienced hearing and mobility impairment (see Figure 3). For 63 per cent of those having trouble with mobility, the impairment was mild (ambulation independent only in certain environments). The remaining 38 per cent required supervision or assistance with ambulation.

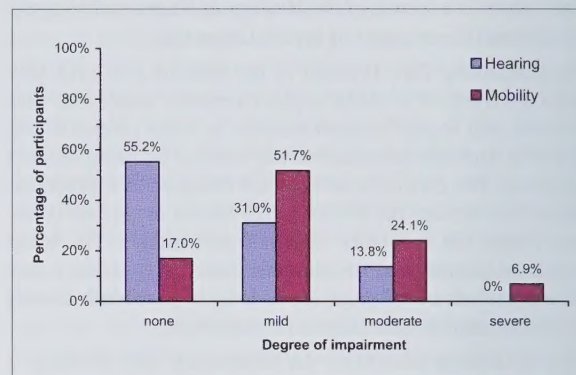


Figure 3. Hearing and mobility impairments affecting participants

Thirty-five per cent of the participants experienced impaired manual dexterity. These impairments were the result of cerebrovascular accidents or strokes (40 per cent), hand tremors (30 per cent), rheumatoid arthritis (20 per cent), and poorly healed wrist fractures (10 per cent).

Most participants showed mild declines in cognitive ability, as was indicated by the Mini Mental State Exam (MMSE) scores. Of the 21 participants for whom MMSE scores were available (5 participants were not tested as there was no evidence of cognitive impairment), only 2 had cognitive impairment. However, 75 per cent of participants displayed some memory loss, especially short-term memory.

Many of the subjects needed help with activities of daily living (ADL) and self-care (see Figure 4). Generally, as the number of ADL limitations and self-care needs increased for each participant, so did the severity of the limitations experienced. It was not surprising that after excluding the 6 participants who were totally taken care of by a family caregiver and the 2 participants requiring no help, 17 of the remaining 23 participants (74 per cent) required at least three home support services to remain independent. Even 54 per cent of the participants living with a family caregiver needed the support of at least one home support service. Of those participants living on their own, 69 per cent required three or more home support services to remain independent.

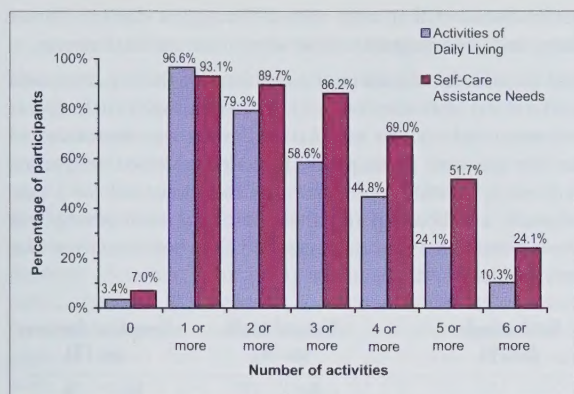


Figure 4. Activities of Daily Living (ADL) and self-care assistance needs

Questionnaire

The participants' perception and rating of their oral health was similar to the examiners' findings in just over a third of the cases. Forty-eight per cent overrated their oral health status and 17 per cent underrated it. Similarly, just over half correctly identified whether or not they needed to see a dentist, while 45 per cent said there was no need, when a clinical need did in fact exist. Of this latter group, 61 per cent felt there was no need to see a dentist because they had dentures. The examiner determined that the remaining participants had caries and/or periodontal disease that needed attention (see Figure 5).

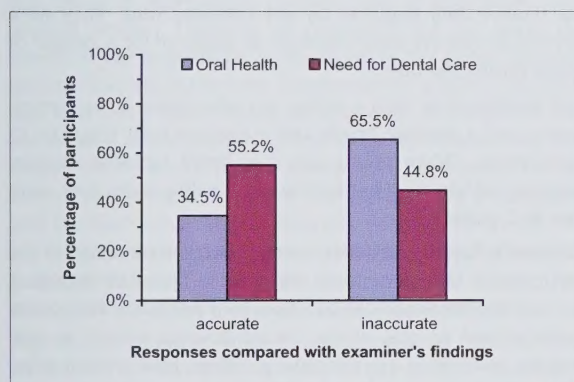


Figure 5. Subjective ratings of oral health compared with examiners' findings

When asked how they felt about going to the dentist, 19 participants believed it was not a problem. Of the remainder, 8 did not like to attend the dental office because of fear of pain and needles, 2 mistrusted dentists, 3 had poor childhood memories, 1 did not like things in the mouth, 1 found scheduling a problem, and 1 mentioned high cost.

Eighty per cent of the participants could not think of anything that could be done to make it easier to go to the dentist. Four participants mentioned better accessibility, four participants mentioned better pain control, and one participant wanted the dentist's help to overcome dental fear.

While 66 per cent of this group of elderly participants reported that they had seen a dentist within the last 5 years,

many others had not visited a dental office for some time (see Figure 6). Five of the 10 participants who had not seen a dentist for over 10 years had visited a denturist. It should be kept in mind that a small number of elderly participants had a difficult time remembering their last dental appointment, even when it was recent. A few caregivers contradicted the information given by the participants.

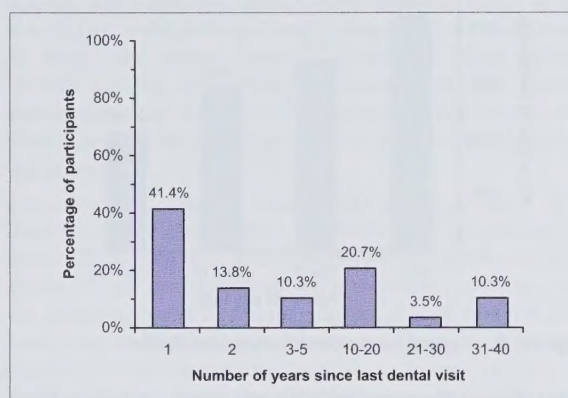


Figure 6. Participants' last dental visit

When asked about oral hygiene practices, the majority of participants reported brushing their teeth at least once a day and a few flossed, used mouthwash, or removed their dentures nightly (see Figure 7).

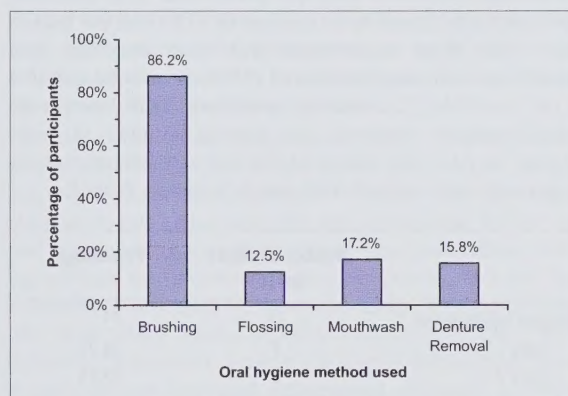


Figure 7. Daily home care practices of participants

The majority of the participants (93 per cent) indicated that they paid for their dental treatment.

In actuality, 16 of the 29 participants (55 per cent) were homebound, 6 (21 per cent) were partially homebound, and 7 (24 per cent) were not homebound. Several participants who had recently become homebound due to a chronic disabling condition had not yet accepted that they were confined to home.

Oral assessment

The oral examinations revealed that, of the 29 participants, 13 (45 per cent) were edentulous while 16 (55 per cent) had natural teeth. Of those participants with natural teeth, 6 (38 per cent) wore a full maxillary denture and 4 (25 per cent) wore a partial denture.

Forty-two per cent of the complete dentures were 16 years old or older, 58 per cent were over 10 years old, and 68 per cent were over 5 years old (see Figure 8). Similarly, of the four partial dentures, three were 20 years old or older, one was 15 years old, and one was 4 years old.

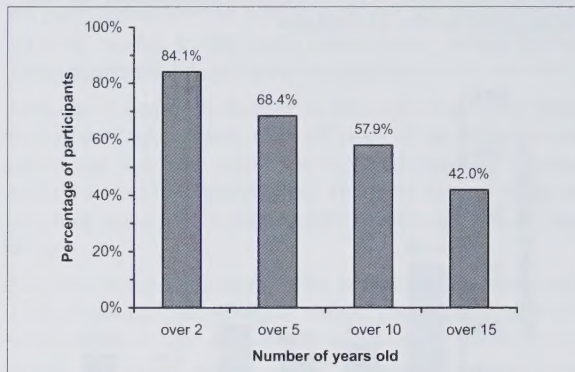


Figure 8. Age of participants' complete denture

Few participants presented with soft tissue pathology. From the oral health assessment, it was noted that one participant (3 per cent) had inflamed palatal tissue that appeared denture-related and three participants (10 per cent) had denture-related ulcers in the mandibular vestibule and floor of the mouth. All ulcers had resolved on follow-up.

When the 16 participants with natural teeth were considered, the average number of teeth per person was 15.4. However, this number increased to an average of 20.3 teeth per person when only those participants with both maxillary and mandibular teeth were considered (9.9 in the maxilla and 10.4 in the mandible). Considering participants with lower teeth only (maxillary denture), the average number of teeth dropped to 7.17. The results of the oral assessment of those participants with natural teeth can be found in Table 2.

	Number of clients (n=16)	Percentage
Gingival inflammation	12	75
Score 1 ^a	9	56.25
Score 2 ^b	3	18.75
Caries	5	31.25
Score 1 ^c	1	6.25
Score 2 ^d	4	25
Tooth mobility (1-2 mm horizontal)	5	31.25

^a Any redness, slight bleeding on brushing
^b Swelling, profuse bleeding, exudate, or generalized redness or ulcer for two weeks
^c Early carious lesions, no pain
^d One or more advanced carious lesions or broken teeth, or signs of pain

Table 2. Oral assessment findings: natural teeth

When assessing the condition of complete and partial dentures, it was found that of the 19 denture wearers, 12 participants (63 per cent) had ill-fitting dentures. Despite the loose dentures, only 6 participants complained that their dentures were loose or uncomfortable and all but 2 always wore their dentures. Of the 4 participants with partial dentures, 2 had

partial dentures that were very ill-fitting but did not bother them, and 2 participants never wore their partial dentures.

Oral cleanliness was more of a problem for those participants with natural teeth (see Table 3). More thorough brushing was recommended and the sulcular technique was demonstrated for this group of participants. In addition, based on participant need, fluoride toothpaste was recommended for 2 participants, a rubber tip (on the end of the toothbrush) was recommended for 5 participants, and chlorhexidine rinse was provided to 1 participant.

Total sample (n=29)		Natural teeth (n=16)		Complete dentures (n=13)	
		No.	%	No.	%
Oral hygiene	Score				
Excellent ^a	0	0	0	3	23.08
Good ^b	1	8	50	7	53.85
Poor ^c	2	8	50	3	23.08

^a Clean, no obvious plaque/calculus on real or artificial teeth
^b Obvious plaque/calculus in one or two places, or generalized interproximal
^c Food particles firmly packed, generalized heavy plaque/calculus

Table 3. Oral hygiene status and mouth odour: a comparison of natural teeth and dentures

Eight participants with dentures were advised to rinse after meals. Seven participants were advised to soak their denture with a tablet daily or weekly. Fourteen participants were given a vinegar recipe to remove calculus and 11 participants were given a baking soda recipe to remove stain. It was discovered that 16 of the 19 denture wearers (84 per cent) did not remove their dentures for any extended time. They were advised to remove their dentures at night or for a couple of hours during the day.

Soft toothbrushes with a rubber tip were given to 16 participants, and a denture brush and a denture bath (cup) to 19 participants. Other mouth aids distributed included denture cleaning tablets to 4 participants and saliva substitute samples to 2 participants.

Thirteen follow-up activities were undertaken on behalf of the participants. One participant was mailed literature regarding the fear of visiting the dental office. Four follow-up visits were made related to oral ulcers. One follow-up related to oral hygiene and one to a periodontal problem. Four written referrals and follow-up telephone calls were made to dentists with respect to restorative needs. One call was made to a pharmacy to order a saliva substitute. An additional follow-up was made for a participant experiencing problems with a denture.

DISCUSSION

The oral status of this group of functionally dependent elderly participants (57 per cent dentate) parallels that of the seniors component of the National Institute of Dental Research in the United States² (of whom nearly 60 per cent were dentate) and a group of homebound elderly studied by Strayer (56 per cent dentate).⁴

The sample in this study better represents the functionally dependent, community-dwelling elderly population than do the samples investigated in similar studies. Paunovich's¹⁷ sample was restricted to males and Strayer⁴ cautions the reader about the representativeness of his sample that con-

sisted of clients of a social service agency who were selected by agency staff for their predictable willingness to participate. The oral health of this group of functionally dependent elderly participants was found to be moderately poor. Of the 16 participants with teeth, 12 (75 per cent) were in need of periodontal debridement, 4 (25 per cent) were in obvious need of restorative work, and 2 (13 per cent) appeared to need an extraction of a non-restorable tooth. Of the 19 participants with dentures, 12 (63 per cent) had exceptionally loose dentures. Another participant, who had only two maxillary teeth, reported the need for additional chewing surfaces. Paunovich,¹⁷ in her study of a group of homebound geriatric patients, found that 100 per cent of the dentate participants were in need of oral prophylaxis, 43 per cent had carious lesions, 14 per cent required extractions, and 86 per cent of edentulous participants needed prosthetic restoration of function. Likewise, Strayer's⁴ investigation found that 90 per cent of the homebound participants who were studied had one or more carious teeth. The higher restorative and periodontal treatment needs reported by other studies could be the result of different modes of assessment (assessment with explorers and periodontal probes versus the visual assessment method used in this study). Because the receptiveness of the population studied in this project was an unknown factor, a simplified oral assessment method that ensured a good experience and maximum acceptance was chosen. With community assessments, there is often a trade-off between a positive experience for the participants and the researcher's ability to gather large amounts of clinical data. Paunovich¹⁷ chose a more complex oral assessment method that investigated not only the hard and soft tissues but also the periodontal condition (gingival assessment, calculus, loss of attachment, and probing depths). However, as Paunovich did not report the results of the periodontal examination in her paper, the procedures may not have been appropriate or some of the findings may have been redundant. However, in retrospect, the use of one of the plaque indices (i.e., the Silness and Loe Plaque Index) in this project would have been useful for the sake of comparison. Strayer's⁴ oral examination investigated only the hard tissues (DMF: diseased, missing, filled teeth). In any event, a routine dental examination in a dental office with X-rays might detect more caries and periodontal disease than was possible to detect visually during this investigation.

From this descriptive study, it was determined that the need for dental care was high, as only 55 per cent of the participants reported visiting the dental office within the past 2 years and 35 per cent of the participants had not seen a dentist for 10 years or more. The percentage of participants visiting the dentist within 2 years is much higher in this study than in a study done by Strayer.⁴ Strayer found that only 27 per cent of the participants in his study had visited a dentist within 2 years. Given the nature of the study participants, memory can be a factor in this type of reporting as illustrated by contradictions by several caregivers to the information given by the study participants. Frequently, these older participants had not seen a dentist as recently as they reported.

Despite the fact that 86 per cent of participants reported regular brushing practices, oral cleanliness was generally inadequate. This was more evident in those participants with natural teeth. All of the dentate participants had plaque and/or calculus present on their teeth and for 50 per cent of the participants the plaque and/or calculus was generalized and heavy. While 77 per cent of the edentulous participants

had some plaque and/or calculus on their dentures, it was generalized and heavy for 23 per cent. With the trend toward increased retention of the natural dentition into old age, oral hygiene is likely to be a major challenge.

The high need for dental care, infrequent dental visits, and poor oral hygiene put the elderly at high risk of poor oral health and impaired general health. Often it is the physical, mental, and functional deficits experienced by many of the elderly that make self-care (oral hygiene) difficult and access to dental care (dental visits) a challenge.¹⁷ These deficits include cognitive and memory impairments, physical impairments, functional dependency on others, and chronic health conditions. Beliefs, attitudes, and cost can also be contributing factors.

Cognitive and memory impairments can contribute to a decrease in self-care ability.⁵ Although most participants in this study showed only mild to moderate declines in cognitive ability, 75 per cent displayed some short-term memory loss. On follow-up visits to the participants in this study, it was found that oral hygiene instructions and directions to remove dentures at night were often forgotten. Fifty-two per cent of the participants lived alone and had no one to remind them or help them with any instructions that were given. In most cases it was advantageous for the examiner to involve a caregiver or a home support worker in oral hygiene care instructions.

Physical impairments also affect self-care ability. Thirty-five per cent of the participants assessed experienced impaired dexterity due to strokes, hand tremors, and rheumatoid arthritis that created difficulties in performing oral hygiene practices. Overcoming these impairments to some degree may require special adaptations to oral hygiene aids (e.g., enlarging the size of the toothbrush handle).

Decreased physical self-maintenance, which can contribute to compromised oral health status, is emphasized by the elderly's dependence upon others.¹⁷ Seventy-nine per cent of the participants had at least two ADL limitations, 59 per cent had at least three, and 86 per cent of those participants needing self-care help required assistance in at least three self-care categories. Consequently, after excluding the 6 participants who were totally taken care of by a family caregiver, 17 participants (74 per cent) required the help of at least three home support services to remain independent. Although a number of home support services were made available to these functionally dependent elderly, dental care was often neglected or overlooked.

Chronic disabling conditions can also affect the motivation and the ability to care for one's self.¹⁹ All but two of the study participants suffered from at least one chronic health disorder, with 31 per cent being managed for three or more chronic health disorders.

Physical, mental, and functional deficits can also limit access to dental care.¹⁷ Unfortunately, 83 per cent of the study participants assessed experienced some mobility impairment. Similarly, 16 participants were completely homebound and 6 were partially so. Those participants with mobility impairments for whom transportation and assistance are not available were at a greater risk for dental disease, not only because they cannot visit the dental office but also because portable/mobile dental programs are non-existent in most communities.

"ORAL STATUS OF ELDERLY RECEIVING HOME SUPPORT SERVICES" ... continued on page 234

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¹D. Kandelman and D. Gagnon, Journal of Dental Research 69 (11): 1771-1775, 1990.

²Birkhead D. Cariologic aspects of Xylitol and its use in chewing gum: a review. Acta Odontol Scand 52: 116-127, 1994.

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QUALITY ASSURANCE PROGRAMS FOR SELF-REGULATED DENTAL HYGIENISTS IN CANADA: A COMPARATIVE ANALYSIS

BY JOANNA ASADOORIAN, DIPDH, BSCD, MSC
(candidate)

KEYWORDS: quality assurance, continuing education, peer review, self-assessment, quality control, quality improvement, continued competency

ABSTRACT

Dental hygienists are currently self-regulated in five Canadian provinces. With this status, the profession has assumed the responsibility for assuring quality delivery of care through quality assurance activities. This paper analyzes and compares the current quality assurance programs within these five provinces. Important components of quality assurance programming were identified and a suggested cycle for quality assurance activity was developed. Both of these are used to examine the provincial programs.

This paper supports quality assurance programming that includes initial self-assessment to identify personal needs and learning goals, a plan for action, implementation of the plan, and ongoing re-evaluation. The author reports that overall, the Canadian Dental Hygiene Practice Standards are underutilized in quality assurance programming. Although continuing education is an essential element of quality assurance, it should not be relied upon exclusively in the profession's attempt to assure quality in the delivery of dental hygiene care.

(français à la page suivante)

INTRODUCTION

This paper analyzes and compares the dental hygiene quality assurance programs in effect in September 2000 in the five Canadian self-regulated provinces. The literature review of quality assurance revealed several key components in quality assurance programming. These factors were used in assessing each province's program and the results were tabulated (see Table 1). A discussion section concludes the paper together with recommendations of the author.

This comparison illuminates the differences and similarities between the quality assurance programs for dental hygienists in Canada. The author's intent is to prompt discussion about and future research into what the dental hygiene profession values and wants to incorporate into quality assurance programming.



To ensure an equitable comparison, only self-regulated dental hygienists of Canada were examined. Dental hygienists who are still under other regulatory umbrellas may have limited control over the development and implementation of their quality assurance programs.

MATERIALS AND METHODS

In September 2000, the Canadian Dental Hygienists Association (CDHA) was contacted and it confirmed that five provinces were at present self-regulated: British Columbia, Alberta, Saskatchewan, Ontario, and Quebec.

Registrars from each of these self-regulated provinces were contacted by facsimile in October 2000 about this paper. Information was requested regarding the province's specific quality assurance program, including mandatory requirements, the foundation of the program, and any other information that could be relevant. All provinces except Quebec responded promptly and this delay was caused by a language problem. With a translator's assistance, a telephone interview was conducted with the registrar and her administrative assistant, based on the original contact letter.

ABRÉGÉ

Les hygiénistes dentaires sont présentement en régime d'autoréglementation dans cinq provinces canadiennes. Avec ce statut, la profession est responsable d'assurer la qualité de prestation des soins au moyen d'activités d'assurance de qualité. Ce travail analyse et compare les programmes actuels d'assurance de qualité de ces cinq provinces. On a identifié d'importants éléments des programmes d'assurance de qualité et on a élaboré un cycle suggéré d'activité d'assurance de qualité. Ces deux volets servent à examiner les programmes provinciaux. Ce document soutient la programmation d'assurance de qualité, qui comprend une autoévaluation initiale visant à identifier les besoins personnels et les objectifs d'apprentissage, un plan d'action, la mise en oeuvre du plan et une évaluation permanente. L'auteure rapporte que, dans l'ensemble, les Normes de pratique de l'hygiène dentaire au Canada sont sous-utilisées dans la programmation de l'assurance de qualité. Bien que l'éducation permanente soit un élément essentiel de l'assurance de qualité, on ne devrait pas s'en remettre exclusivement à celle-ci dans l'effort que fait la profession pour assurer la qualité de la prestation des soins dentaires.

Further clarification was later needed regarding the quality assurance programs for Quebec and Saskatchewan and these provinces' registrars provided the necessary information.

A search of the literature was conducted through MedLine for journal articles published between 1980 and 2000. The search was limited to English dental journals subscribed to by the University of Toronto. Selection criteria included original research and review articles, but editorials were included where relevant. In addition to material resulting from the original search, referenced material was also included. A secondary search on continuing education for dental hygienists was similarly conducted. Through this search, direct and referenced material also emerged.

From the literature, the author has extrapolated several key components that are considered important when enhancing quality assurance initiatives for health professions. Each provincial program was then analyzed to see which key components had been incorporated into it. It should be noted that this is not a scientifically developed measuring tool, and the author concedes that the value, weight, and rationale for each of these individual components requires further examination.

LITERATURE REVIEW

History of quality assurance

Until the mid-1900s, quality assurance initiatives were concerned mostly with the structural components of health care delivery, specifically the facilities, equipment, staff, and administration. In the 1950s, requirements to meet specific criteria began to be imposed prior to some medical interventions and services. As health care expenditures escalated in the following decade, quality assurance measures were used as a method to control costs.¹

In the late 1960s, the National Advisory Commission on Health Manpower (U.S.) recommended steps to assist health practitioners in maintaining competence.² Shortly thereafter, several states made continuing education a requirement for membership or licensure of professionals.² Later, the Department of Health, Education and Welfare in the United States recommended that professional organizations incorporate strategies and requirements to assure continued competency.² Mandated continuing education was not specifically mentioned by the department. However, this was the interpretation despite subsequent assertions to the contrary later in the decade.²

Meanwhile, the implementation of mandated continuing education gained momentum. In the late 1970s, state legislation started to include requirements for several professions for continued education.² By the end of the decade, every state was participating in mandated continuing education to some degree.² Interestingly, of the many professions involved in mandating quality assurance initiatives, dentistry was one of the least involved.²

In Canada, continuing education as a quality assurance initiative is mandated provincially for each profession. However, it was not until the mid-1980s, and substantially thereafter, that mandatory continuing education occurred here.² Since its inception, mandated continuing education and government enabling legislation have continued to increase overall.² At present, there are wide variations in quality assurance programming throughout all jurisdictions and health professions, including dental hygiene.

What is quality assurance?

Quality is a scale³ and relies on measurements and actions through assessments and quality improvement/control respectively.⁴ Quality assurance can be defined as a commitment to ensuring sufficiently good quality. However, the question then arises about what is "sufficiently good quality." The use of effective products and services is crucial for the provision of quality care, and they must be delivered correctly and under appropriate conditions.⁴

The term "continued competence" is often used as a synonym for quality assurance and certainly remaining current and ensuring sufficient skill are essential in ensuring competence.⁵ Burakoff and Demby view malpractice as an end product of inadequate quality assurance efforts.¹ However, it should not be assumed that the absence of malpractice assures quality. If quality assurance activities are aimed at improving the delivery of health care, quality assurance efforts should promote the advancement of professional services overall, rather than just the avoidance of incompetence.

Why provide quality assurance?

Two key issues demand quality assurance in health care delivery. First, consumers of health care are limited in their ability to assess technical aspects of a service and are thus at a disadvantage.⁴ Second, when the quality of health care services are poor, outcomes can range from problematic to catastrophic. Health care professionals possess specialized skills and knowledge that may be difficult for the public to understand, and society insists that professions be accountable for

protecting the public's interests.⁶ Dental hygienists have demonstrated the acceptance of the rights and responsibilities inherent of professionals.⁷

How can quality be assured?

One challenge in assuring quality health care delivery is the lack of proven measures.⁴ Most research conducted so far has been on quality *assessment* rather than on quality improvement and control.⁴ As well, it is unlikely that a single measurement will capture overall quality.⁴

In the mid-1900s, the process of health care, more than its structural components, became an indicator for quality care.¹ At present, provider self-regulation focuses primarily on the process component. Self-regulated approaches are often volunteer mechanisms established to promote quality within a specific profession and are based on minimum government requirements.⁴ The rigorousness of such mechanisms is largely determined by the individual professional regulators and their members.

The Practice Standards for Canadian Dental Hygienists⁸ are a revised version of the CDHA-endorsed Health Canada publication, *Clinical Practice Standards for Dental Hygienists in Canada*.⁸ These standards can be an invaluable tool when used to their full extent because they move beyond process and incorporate outcome measures. The standards include outcome-based criteria and standards. Thus the dental hygienist is required to evaluate client outcomes against predetermined goals and treatment plans while incorporating measures such as indices, client satisfaction, effectiveness, and improved oral health status.⁸

Quality assessment through measurement

A valid assessment of one's delivery of care requires methods that include standards against which to measure performance and the measurement scope. These measurement methods must also be understandable. First, Canadian dental hygienists are fortunate to have the Canadian dental hygiene standards of practice that were developed by CDHA. However, CDHA is a national voluntary organization, and provincial legislation does not require the use of CDHA's standards of practice in quality assurance programs. But these standards have been modified and subsequently utilized as a part of provincial quality assurance regulations for dental hygiene care.

These standards, the result of both scientific research and consensus, are based on all three concepts of Donabedian's model of health care evaluations: structure, process, and outcomes.^{8,9,10} The literature supports the development and utilization of explicit practice standards and of practice guidelines and/or criteria for appropriate decision-making regarding patient care and for the implementation of quality assessments.^{11,12} The importance of criteria and standards to quality assurance measures cannot be overemphasized.

Second, measurement requires scope, from the very broad (an entire hospital) to the very specific (one therapeutic procedure). While government legislation tends to focus on overall practice patterns, regulatory bodies focus on the more specific professional activities. The ideal is broadly focused quality

assurance activities where the whole dental practice, including dental hygiene activity, is included in quality assurance activities.¹¹

Third, measurement methods must be understandable.⁴ While it may not be necessary for the public to have an understanding of the specific aspects of quality assurance measurement within a profession, it is obviously imperative that the licensed/registered membership does. Ideally, the public should be aware that quality assurance measures exist for their protection.

Methods for carrying out quality assessment include peer review and self-assessment. Dental hygienist students do not take a specific course in quality assurance and there are no educational models for teaching quality assurance concepts. However, there are self-assessment opportunities in the clinical setting.⁷ Self-assessment and peer evaluation are concepts taught and practised to a moderate degree in other courses and more so in baccalaureate programs.⁷ Because the skill of self-assessment must be specifically taught and practised,⁷ dental hygiene students may require more rigorous education and practice in quality assurance mechanisms (such as self-assessment and peer review) to fully understand, value, and participate in them after graduation. With a stronger educational background in these concepts, compliance with and satisfaction in quality assurance activities may be enhanced for the practising dental hygienist.

Quality improvement and control through action

Quality improvement and control mechanisms move beyond the basic assessment and measurement of quality. They strive to improve dental hygiene delivery of care, to remedy deficiencies, and to amend through deliberate actions the predetermined weaknesses of the practitioner. Quality care is more likely when quality improvement and control are emphasized over quality measurement.⁴ As only a small minority of health care providers are incompetent, most of the effort in quality assurance programming should be directed to the large majority who would benefit from quality improvement.¹¹

What is the role of continuing education in quality assurance programs?

Continuing education has been a primary component of professional quality assurance programs since the 1970s when it became mandated as a method for ensuring quality health care delivery.^{2,5} Today, mandated continuing education exists for many different professions and jurisdictions.¹³ However, research has been inconclusive on the benefits of continuing education for the quality of health care.

Studies based on participant self-reporting showed continuing education activities did produce a change in practice.¹³ Continuing education activity has been shown to result in fewer errors in diagnosis and treatment when participation was both recent and frequent.³ It is viewed positively and is a preferred method of ensuring continued competency, rather than re-examination, peer review, and performance evaluation.¹³ Rapid changes in knowledge, technology, and

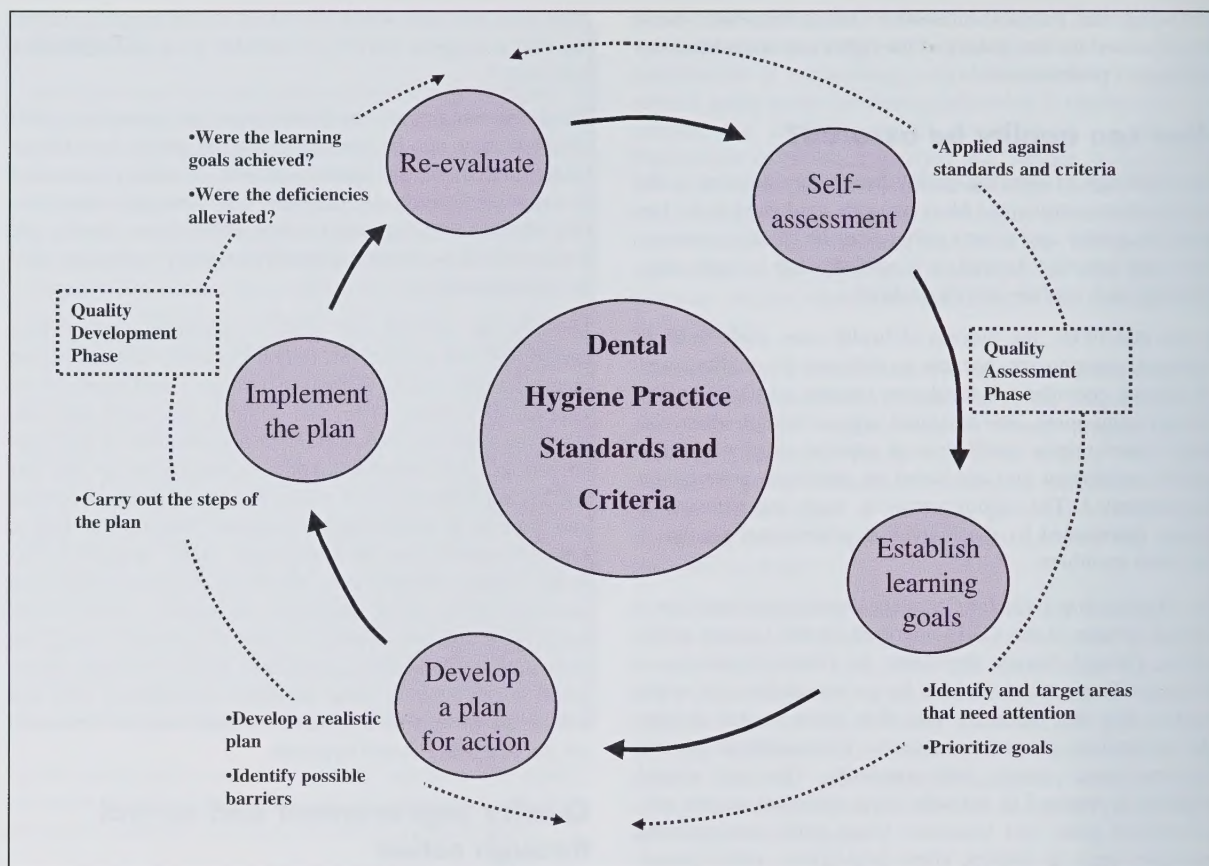


Figure 1. The quality assurance cycle (model 1)

processes, especially in health care fields, demand that providers are aware of and understand current research. Even though learning cannot be forced, it is argued that exposure to the latest information through mandated continuing education will provide some improvement in knowledge acquisition.

Studies, however, have failed to demonstrate a link between continuing education and changes in health care professionals' behaviour or the quality of the care provided.^{1,5,13} Furthermore, no long-term effect in the quality of care provided has been demonstrated following participation in continuing education activities.^{5,13} In fact, research has demonstrated few health care providers actually use the skills and knowledge they acquire through continuing education programs and courses.^{5,13} Course content may be inappropriate for the varying levels of course participants,^{5,13} as courses are usually set up with all participants assumed to be at the same learner level.⁵

Developing a cycle for quality assurance activity

The literature suggests a self-evaluation process where the health care provider should first, and continually, identify their specific learning needs in order to improve overall performance.^{5,11} For Canadian dental hygienists, a self-assessment using the practice standards can reveal areas that need attention. The data that an individual collects provide the

basis for targeting and prioritizing personal learning objectives.⁵

Once a self-assessment has been done, appropriate goals, a plan for change, and a method for evaluation can be developed.⁵ Incorporating initial learning objectives and evaluative procedures can enhance learning activities. The CDHA acknowledges that quality assurance measures need to be self-directed to enhance motivation and increase the relevance to the individual provider.¹⁰

Malpractice does not usually stem from a lack of knowledge but rather from not applying it.² This reinforces the point that simply attending continuing education courses is not sufficient for quality assurance. Continuing education should relate to real or perceived deficiencies of the practitioner or his/her specific practice to be relevant and interesting. This motivates the learner to put the newly acquired knowledge and skills to use. Just mandating continuing education has not been shown to guarantee continued competency.^{1,2,13}

Several important factors may enhance the potential of continuing education in quality assurance efforts. These factors have been summarized and organized into a "cycle" of quality assurance activity (model 1) (see Figure 1). This cycle suggests several steps for dental hygienists to follow in their quality assurance efforts. Few would disagree that continuing education is an integral component in assuring quality delivery of dental hygiene care and is an invaluable tool in conducting quality assurance activities. Continuing education may play a role in each step within the cycle.

RESULTS

The key components in quality assurance programming

Table 1, based on the literature reviewed, lists important factors (key components) to be considered in the development of effective quality assurance programming. The five quality assurance programs in Canada have been analyzed in respect to these components. The table will help to demonstrate the scope of each program, highlighting the similarities and differences among them.

DESCRIPTION AND ANALYSIS OF PROVINCIAL QUALITY ASSURANCE PROGRAMS

British Columbia

Dental hygienists in British Columbia are self-regulated under the Health Professions Act.¹⁴ The quality assurance committee is mandated under the act and operates within the provincial Dental Hygiene Regulations and Bylaws.¹⁵ Mandatory continuing education is the primary component of the quality assurance program.¹⁶ Provincial practice standards are within the quality assurance mandate and have been revised very recently.¹⁴ Dental hygienists are encouraged to use the standards to assess their own practice, to identify weak areas, and to focus on these in their continuing competency activities.¹⁴

In British Columbia, dental hygienists are required to participate in continuing education activities in order to remain reg-

istered, and the content of these activities must be related to dental hygiene practice.¹⁶ The quality assurance committee must approve any course for credit.¹⁶

The minimum requirement is 75 credit hours (one hour continuing education equals one credit hour) during a three-year cycle, and excess credits cannot be carried over to subsequent cycles.¹⁶ Two-thirds of these credit hours must specifically be in dental hygiene practice.¹⁶ Proof in the form of properly documented records must be provided by the dental hygienist.¹⁶ Mid-year and final transcripts of continuing education activity are provided for the dental hygienists and members must retain detailed information regarding each educational experience.¹⁶

Acceptable credit material and course sponsors are limited and are outlined for the registrant. Three categories of course content material and their respective credit requirements are spelled out. The dental hygiene practice category must have a minimum of 50 credits in one cycle.¹⁶ The other two categories, practice management and professional enhancement, can each have up to a maximum of 25 credit hours per cycle.¹⁶ The continuing education formats included for credit consideration vary broadly.¹⁶

Alternatives to continuing education requirements include the successful completion of an approved examination or a dental hygiene refresher course within the three-year cycle.¹⁶ Dental hygienists who are not currently practising are exempt from these requirements. However, when they choose to re-enter practice, they must have completed one of the requirements (the examination or the refresher course) within the three years prior to re-entry.¹⁶ In addition to continuing education activities, all practising registrants are required to practise a minimum of 500 hours per three-year period.¹⁶

KEY COMPONENT	B.C.	ALBERTA	SASK.	ONTARIO	QUEBEC
1 Includes an initial assessment and self-evaluation to identify one's learning goals	X	X	0	XX	0
2 Focuses on quality improvement and control in addition to measurement	X	X	X	XX	X
3 Based on Canadian Dental Hygiene Standards of Practice (or provincial equivalent)	X	X	0	XX	0
4 Designed to improve specific gaps in proficiency, be personally relevant and useful	X	X	X	XX	X
5 Self-directed (dental hygienist determines and implements activities independently)	X	X	X	XX	X
6 Involves a plan for change or action plan (identifies possible barriers)	0	0	0	XX	0
7 Formulates the implementation of the action plan	0	0	0	XX	0
8 Includes ongoing evaluation and re-evaluation	0	0	0	XX	0
9 Accessible (financial, physical) to all dental hygienists	X	X	X	X	X
10 Implements adequate records system	XX	XX	XX	XX	N/A
11 Facilitator and assistance available as required	XX	XX	XX	XX	N/A
12 User friendly, realistic, and understandable	XX	XX	XX	XX	XX
13 Pertains to the individual's work environment as a whole or is broad-based	XX	XX	XX	XX	XX
14 Proactive and, therefore, preventive	X	X	X	XX	X
15 Able to remedy deficiencies in quality	X	X	X	XX	X
16 Includes some level of mandatory compliance	XX	XX	XX	XX	X
17 Encourages accountability and self-responsibility	X	X	X	XX	X
18 Provides options	XX	XX	XX	XX	X
19 Moves beyond structural and process concepts to outcome-based concepts	X	X	0	XX	0
20 Is revised regularly and encourages feedback from dental hygienists	N/A	N/A	N/A	XX	N/A

XX Totally applies or is a required component within the program guidelines

0 Does not apply or is not a required or suggested component within the program guidelines

X Partially applies or is encouraged or suggested within the program guidelines

N/A Information not available

Table 1. Key components in quality assurance programming

Alberta

In Alberta, dental hygienists practise under the Dental Disciplines Act, which includes the Dental Hygienists Regulations and Bylaws.¹⁷ Under the regulations, annual certification requires that dental hygienists comply with the continuing education requirements for the province.¹⁷

As described in the Alberta Dental Hygienists Association's (ADHA) Continuing Education Program Policies, the objective of the ADHA program is to facilitate and enhance continuing competency of dental hygienists.¹⁸ The Program Policies indicate key elements of the program and support accepted standards of practice, assurance of quality of care, and promotion of education throughout one's professional career in a fair and cost-effective manner.¹⁸ The policies also state that continuous study and self-assessment of one's educational needs are the responsibility of the dental hygiene professional.¹⁸ The program has a two-pronged approach that consists of continuing education credit hours and practice hour requirements.

A minimum of 75 continuing education credit hours (one credit hour equals one hour of continuing education) is required during a five-year cycle, and any excess credit hours cannot be carried over to subsequent cycles.¹⁸ If credit hour requirements are not met within the cycle, the dental hygienist must participate in a refresher course or take the National Dental Hygiene Certification Board Examination in order to remain licensed.¹⁸

Practice hour requirements must also be met within the five-year cycle in order to maintain active membership.¹⁸ A minimum of 1,000 practice hours during the five-year cycle is required, and again, excess hours cannot be carried over to subsequent cycles.¹⁸ Dental hygienists not meeting the practice hour requirements may write the Certification Examination to obtain registration.¹⁸

The Program Policies Handbook provides details regarding the proper reporting and recording of the dental hygienists' continuing education activities and practice hours.¹⁸ A minimum of one transcript summarizing the activities of each dental hygienist is provided annually as is an annual summary of practice hours for each registrant.¹⁸ Random audits may be conducted (the timing, selection process, and criteria were not indicated) to validate the reporting.¹⁸

Continuing education courses should be related to the practice of dental hygiene, dentistry, professionalism and/or ethics.¹⁸ Specific guidelines have been established regarding agencies providing continuing education plus acceptable course sources. Continuing education activities can ultimately be accepted or denied for credit by the Practice Review Board; non-recognized course sponsors must be pre-approved.¹⁸ A wide variety of formats of continuing education is acceptable.¹⁸ Self-study activity cannot exceed 60 per cent of the total credit hour requirements.¹⁸

Saskatchewan

The Saskatchewan Dental Disciplines Act was passed in 1997, followed one year later by the Saskatchewan Dental Hygiene Association (SDHA) Administrative and Regulatory Bylaws.¹⁹ Subsequently, Continuing Education Guidelines were developed and implemented by January 1999.¹⁹

The Continuing Education Guidelines state that continuing education will be the primary mechanism for quality assurance activity for Saskatchewan dental hygienists.²⁰

Continuing education requirements must be met for registrants to remain licensed.²¹

As stated in the Dental Disciplines Act, registrants must acquire and subsequently prove that they have obtained the required number of continuing education points (one hour continuing education equals one credit point).²¹ Members must to acquire 36 points over a three-year cycle, and excess credits cannot be carried over to future cycles.²¹ These requirements apply to practising and non-practising members.²⁰

Continuing educational activities must be related to dental hygiene practice or to the professional responsibility or ethical obligations of the member.²⁰ Four categories of continuing education activity are acceptable for credit: dental hygiene practice, practice management, professional involvement, and personal enhancement.²⁰ Within these categories, a minimum of 18 credits must come from the dental hygiene practice category.²⁰

Continuing education activities sponsored by the SDHA are all pre-approved.²⁰ Other courses may also be acceptable but must be approved on an individual basis by the registrar.²⁰ Dental hygiene members must record and report their continuing education activities regularly, using the prescribed forms.²⁰ The dental hygienist must maintain a file detailing their continuing education activities.²⁰ The registrar will provide the registrant with a formative report mid-year and a summative transcript annually.²⁰

Members have the option of successfully completing a council-approved licensing examination rather than fulfilling the continuing education requirements.²¹ If there is disagreement between the registrant and the council regarding the necessary requirements for re-licensure, the registrant can apply for a review.²⁰ There are no practice hour requirements for Saskatchewan dental hygienists.¹⁹

Ontario

The Quality Assurance Regulation and subsequent program for Ontario dental hygienists build on the requirements of the Regulated Health Professions Act, 1991.²² The current program, which came into effect in 1999, encompasses total quality improvement, continuing quality improvement review, peer practice review, and remediation.²² Total quality improvement (meaning that data will periodically be collected from Ontario dental hygienists regarding their dental hygiene practice) is necessary to make group-based comparisons.²² This process is intended to yield information that may press the College to make adjustments in quality assurance programming.²²

Continuing quality improvement review, or the self-assessment phase, is carried out primarily through the development and subsequent evidence of an ongoing professional portfolio maintained by all dental hygienists throughout their career.²² The professional portfolio is intended to help dental hygienists examine their dental hygiene practice, identify areas that would benefit from improvement, and develop and implement plans for continuing quality improvement activities to satisfy these needs.²² The portfolio is a record of the dental hygienist's professional activities as he/she moves through the quality assurance process.

It is emphasized that every dental hygienist is responsible for participating in quality improvement activities to ensure the

program objectives are reached.²² Methods for achieving goals are suggested but the dental hygienist is not limited to those suggestions. It is stressed that the dental hygienist's plan of action should be personalized for her/his needs, situation, and resources.

The College of Dental Hygienists of Ontario (CDHO) Dental Hygiene Standards of Practice, the CDHO Code of Ethics, and the CDHO regulations and bylaws are the documents that dental hygienists in Ontario must use when evaluating their practice.²² All Ontario dental hygienists must provide sufficient evidence that continuing quality improvement is taking place in order to remain registered.²² A portfolio assessment may be recommended if such evidence is lacking.²² This assessment may result in extended time to achieve goals, an exemption from some requirements, directed continuing education activities, an audit of the practice, or possibly no further action.²²

The peer review phase includes an annual random audit of approximately 10 per cent of dental hygienists' professional portfolios. In addition to random portfolio audits, an audit of a particular dental hygienist may be carried out if there has been a question regarding his/her professional conduct. During this audit, the portfolio is reviewed; if it is satisfactory, no further action will be deemed necessary. However, more information may be required and the dental hygienist is given an opportunity to submit additional material.²²

The assessment criteria and guidelines used in such a review are provided to the dental hygienist. The registrant may be required to correct any deficiencies, be granted an exemption, be directed in continuing education activities, or required to undergo a practice review.²² If a practice review is warranted and confirms the deficiencies, then the dental hygienist is granted an opportunity to make additional submissions.²² It is also possible the dental hygienist may have to complete a remedial program. If this is deemed inadequate to address the deficiencies, terms may be imposed on registration.²²

Since the passage of the quality assurance regulation, practice hour requirements have been revoked.²² The professional portfolio includes several forms that document the registrants' quality assurance activities.²²

Quebec

The quality of services and professional requirements of the member dental hygienists, including continuing education, are considered obligations under the regulations of the *Code de déontologie*.²³ In Quebec, continuing education is the primary quality assurance activity for dental hygienists. The Quebec government is examining the possibility of mandating continuing education for dental hygienists under the provincial professional regulation (*Code des professions du Québec*), but it is not currently legislated.²³

The Ordre des hygiénistes dentaires du Québec (OHDQ) organizes two provincial congresses/conventions each year and dental hygienists are strongly encouraged to attend.²³ In addition to the provincial assemblies, attendance at additional lectures is recommended for dental hygienists so they can acquire an appropriate level of continuing education activity, approximately 15 hours a year.²³

A provincial inspector visits dental hygienists every five years to determine the extent of continuing education activities that each member has pursued in that time period.²³ If there is a

perceived lack of knowledge, the inspector will require the deficiencies to be remedied. The member is expected to report the plan of action to bring about the needed changes.²³

DISCUSSION AND RECOMMENDATIONS

The current thrust toward measurement in quality assurance programming should begin to shift toward total quality improvement within the health professions. Dental hygienists in self-regulated provinces of Canada appear to be moving in this direction as they implement their own quality assurance programs. These dental hygiene governing bodies have introduced provincial requirements for their registrants, developed regulations and bylaws, and installed mandatory requirements for licensure. Clearly much has been accomplished in these provinces in the efforts to assure quality dental hygiene delivery of care.

The quality assurance programs for dental hygienists in the five self-regulated Canadian provinces vary significantly. It would benefit everyone if the strengths of each program were determined and then incorporated nation-wide. For decades, health professionals have relied heavily on continuing education for quality assurance purposes. It is important for the dental hygiene profession to constantly re-evaluate the adequacy of this method.

Although research has not determined specific elements that are required for quality assurance programming, implicit factors have emerged as important. These factors or key components demonstrate a common-sense approach to quality assurance activity, and health care professionals would be remiss in not considering their value. There appear to be three primary areas that need greater emphasis in quality assurance programming: use of the dental hygiene standards of practice; use of a process such as the quality assurance cycle (model 1) for structured quality assurance activities; and improved education in quality assurance for dental hygiene undergraduates.

First, the Practice Standards for Dental Hygienists in Canada are clearly underutilized in quality assurance programming. Although two provinces encourage their use in quality assurance activities, it is only in Ontario that registrants are actually required to measure their practice against the provincially modified standards. Without the development of the practice standards and their thorough utilization, it would be impossible to identify accurately the areas of one's practice that would benefit from continuing education and other learning initiatives or to track subsequent improvements. Canadian dental hygienists believe that the practice standards for dental hygienists accurately depict how dental hygiene care should be delivered and that they should be more vigorously incorporated into quality assurance activities. It is discouraging that such a document has been underutilized.

Second, the cycle of quality assurance activity (model 1) is one suggested means for incorporating several important facets of quality assurance programming that emerged through the literature review. This cycle is a process analogous to other program plans or strategic plans for change. It incorporates similar steps that include establishing goals, developing a plan, implementing the plan, and re-evaluating the goals. It is accepted that no real change in behaviour can transpire unless the person acknowledges there is a need.

And needs emerge through self-assessment.

Attending continuing education sessions without having first identified one's personal needs is misguided, for two reasons. One, continuing education has limited value if it is irrelevant to the learner. Two, if the learner does not appreciate that a need for learning exists, there will be little chance for relevant new knowledge or skills to be assimilated or to produce long-term change in behaviour.

It is inconsequential whether one jurisdiction exceeds another in mandatory continuing education requirements if little learning or implementation actually occurs. The value of establishing arbitrary requirements for points or credit hours has not been demonstrated. Using the suggested cycle of quality assurance activity or a similar process will likely ensure that continuing education activities are (1) directed by one's personal learning needs and (2) part of a plan that is acceptable and that can be implemented personally and continuously re-evaluated to determine if goals have been accomplished. In Ontario, the quality assurance program requires the dental hygienist to move through all of these steps and incorporate continuing education activities as individually required.

Third, the importance of teaching these skills to dental hygiene undergraduates should not be minimized. Practising dental hygienists have little choice but to adhere to mandatory requirements of their profession whether or not they have an acute understanding of the value of quality assurance initiatives, like self-assessment and peer review. As true professionals, dental hygienists should assume responsibility for developing their learning goals and plans and for implementing them. Students should understand that their formal dental hygiene education is only the beginning of their professional learning.

Quality assurance programs ideally serve as tools to structure and organize one's learning activities, rather than as impositions to be viewed negatively. When one fully understands the value of quality assurance activities and how to participate in them, they will be perceived more favourably. Continuing education is viewed positively because it is familiar, valued, and understood. Other quality assurance initiatives can be as acceptable if they are learned and practised, preferably early in one's education. Colleges and universities should begin by providing opportunities for self-assessment and peer assessment in a non-threatening learning environment.

In conclusion, mandatory requirements should emphasize a process of self-assessment and planned change, rather than concentrating on continuing education credit hours. The Ontario quality assurance program goes far in accomplishing this and could be used as a model for other jurisdictions and health professions. The quality assurance programs in the other self-regulated provinces may be able to assure quality to a greater extent by incorporating some of the other key elements into their programming and moving beyond mandatory continuing education.

It is important for dental hygienists to focus on the real impetus for quality assurance activities: to assure safe and appropriate oral health care for the public. It is in everyone's best interest if this objective can be explicitly assured. As self-regulated health professionals, dental hygienists are directly responsible for accomplishing this. If dental hygienists are to

be effective life-long learners, they must be capable of determining what they need to learn, how to learn it effectively, and finally, how to evaluate their success. Quality assurance programming for all Canadian self-regulated dental hygienists should be adjusted to accomplish this in the future. Prospective research endeavours are needed to investigate the value of including the important key factors (beyond mandatory continuing education requirements) in quality assurance programming.

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PROBING THE NET

BY KAREN WOLF, DIPDH

What a great conference! I was encouraged in both my personal and professional life to "use the good dishes" as well as develop my "cache." But self-improvement, personal or professional, takes effort. With this article, I hope to tempt you to use the resource your home or office to stretch yourselves professionally. This month I am providing only one Web address, but there are a great many parts to this site, < www.dentalcare.com >, Procter and Gamble Global Dental Resources site.

Once there, click on **Hygienists' Corner: Dental Hygienists News Online**. There are approximately 10 areas to visit and here are some "teasers" about the articles contained there. Let's get started!

PROFESSIONAL DEVELOPMENT: *Interpreting and Evaluating a Research Report.* "Dental professionals should be familiar with the sections of the literature that relate to the areas of their practice and should review appropriate journals on a routine basis. Visit each of the topics listed below ... Abstract, Introduction, Materials and Methods, Results, Discussion, Summary and Conclusions, References."

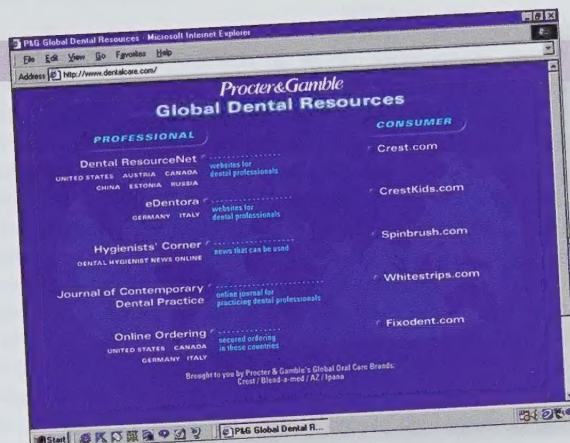
PEDIATRIC DENTISTRY: *Oral Conditions in Young Children with Developmental Disabilities: Addressing Common Parental Concerns.* "This article presents intraoral photos of oral manifestations associated with developmentally-challenged patients, and steps to take in counseling caregivers."

CLINICAL DENTAL HYGIENE: *Intra/Extra Oral Exam.* "Since patients are routinely scheduled for a recare visit at six month intervals, the recare appointment is ideal for a soft tissue examination that will allow for early detection and treatment of many disease entities."

COSMETIC DENTISTRY: *Care and Maintenance in the New Millenium.* This article "reviews the care that is needed for various dental restorations. The proper care of a restoration can affect its endurance. This article also highlights new and traditional materials being used in dentistry today."

CARIOLOGY: *Understanding the Caries Process.* This is a three-part article, on Demineralization, Remineralization, and Cariology (mechanism of fluoride for caries control).

PERIODONTICS: *The Three C's of Gingival Description.* "Accurate gingival description is key to appropriate diagnosis and therapy. This interactive article clearly presents the three C's of gingival description: color, contour, and consistency."



PATIENT HANDOUTS: *Patient Instructions Following Scaling and Root Planning.* "This handout ... informs the patient what he/she might experience following this procedure including post-treatment instructions and information."

HEALTH PROMOTION: *Smokeless Tobacco.* "This article presents a four step program for helping patients with tobacco cessation, and also provides a review of the types of smokeless tobacco and health effects associated with the use of smokeless tobacco."

Until next time! 



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The School of Dental Hygiene is located in the Faculty of Dentistry at the University of Manitoba and is a part of a dynamic health sciences campus. This university provides opportunities for collaboration with other health disciplines in the attainment of excellence in teaching, research, service and outreach activities. This is a full time, tenure-track position at the rank of Assistant Professor effective August 1, 2002.

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The deadline for applications is March 15, 2002.

Beliefs and attitudes can be an obstacle to obtaining dental care. To seek dental care, participants must believe that there is a need for that care.²⁰ They have to know what oral health means, have expectations of good oral health, and believe that dental health care personnel can help them.²⁰ During this descriptive study, although 35 per cent of the participants rated their oral health in accordance with the oral assessment, 48 per cent thought their oral health status was much better than it was. Likewise, 40 per cent of the participants did not feel there was a need to visit the dentist when a need did exist. Many participants believed that they did not need to see a dentist because they had dentures. These findings are in contrast to Strayer's.⁴ He found a low perceived dental health status and a high perceived need for dental care among his subjects. However, he did not compare perceived need to actual need so the accuracy is unknown. Numerous studies have shown perceived dental needs among the elderly to be lower than actual clinical need.²¹⁻²³

Lower perceived-than-actual need may be due to lower expectations for oral health by the older cohort.²¹⁻²³ The fact that only 6 of 12 participants complained about loose or uncomfortable dentures and all but 2 participants functioned with their ill-fitting dentures suggests oral adaptations by the frail elderly individual were coupled with low oral health expectations. The "at-home" assessments performed for this study provided a great opportunity for the dental hygienist/examiner to educate this group about what constitutes good, or at

least adequate, oral health and the possibilities associated with dental care.

The cost of dental care was not investigated in this study but may be a barrier to seeking dental care for this group of frail elderly individuals, as 93 per cent of these participants paid for their own dental care. However, some studies have not shown an increase in dental service utilization even when free or reduced-cost services were available.²⁴

Frail elderly individuals having problems with their dentures can either remove them and eat a soft diet—which is often inadequate—or persevere with non-functional dentures. However, a study of 140 community-dwelling edentulous elderly by Simard et al.²⁵ found that 62 per cent of those wearing non-functional dentures took medications for gastrointestinal problems such as constipation. For dentate individuals, oral infections and broken or carious teeth can reduce the joy of eating. Therefore, for the older dentate and edentulous individuals alike, poor oral status can affect nutritional intake and, in turn, can have a negative impact on overall health.²⁶

While oral disorders are rarely life-threatening, the oral cavity can have a significant impact on the individual's social and psychological well-being.²⁷ This part of the body is of primary importance in expressing thoughts and feelings and in communication, and so often reflects the most obvious signs of aging. Older individuals with dentures may avoid social interaction because they are afraid their dentures will come loose during conversation or eating, or that they have "denture odour." Elderly dentate individuals, embarrassed about the condition of their teeth, may refrain from smiling or talking.⁸

Grenfell Regional Health Services St. Anthony, Newfoundland

Dental Hygienist/Dental Health Promoter

Grenfell Regional Health Services is seeking a *Dental Hygienist/Dental Health Promoter* to provide clinical care, as well as assist in planning and implementing programs to promote improvements in oral health, in the Grenfell Region.

This position will report to the Director of Dental Services and will be based in St. Anthony. Significant travel within the Grenfell region will be necessary. Therefore, possession of a driver's license and access to a vehicle would be preferred assets.

Must be willing to carry out one evening clinic weekly when in St. Anthony.

Specific Duties & Skills:

- ability to perform the full range of clinical services as defined within the "Dental Auxiliaries" regulations of the "Dental Act".
- ability to maintain records, prepare reports and, care for dental supplied, equipment and other clinical property.
- with advanced training and approval by the Newfoundland Dental Board, to perform advanced clinical duties.
- ability to assess dental prevention and dental health promotion needs of the population of the GRHS region.
- ability to conduct public education in schools and through other forums to promote dental health in community as well as clinical settings.
- ability to conduct screenings and compile statistics for epidemiological purposes.

Qualifications:

- Graduation from an approved School of Dental Hygiene.
- Experience in Dental Health Promotion.
- Experience in program planning, teaching and public speaking.
- Eligible for registration as a Dental Hygienist with the Newfoundland and Dental Board.

Salary: HS-32, Step 1 at \$35,177.26 to Step 3 at \$39,133.64 annually.

Interested persons are asked to submit their resume, including references, and stating competition number 01.77, to:

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CONCLUSIONS

The functionally dependent and frail elderly experience poor oral health. The most common unmet dental needs identified in this study were for periodontal (75 per cent) and restorative (25 per cent) care for the dentate group, and prosthetic care to address the problem of loose dentures for the denture group.

What are the responsibilities of the dental and dental hygiene professions for the dental care of the increasing numbers of functionally dependent elderly persons living in the community? The first responsibility is to be aware of the situation. Many oral health professionals have not been sensitized to the dental needs of the functionally dependent elderly population and to the impact that poor oral health can have on their general well-being. Formal and continuing education for all oral health professionals and a research agenda are needed to increase the understanding of the oral health needs of a growing population of frail and functionally dependent elderly individuals living in communities throughout Canada.

The second responsibility is action. As oral health professionals, we have a professional responsibility to meet the increasing needs of the elderly, especially those who are vulnerable to oral disease. As our clients in private practice age, we promote the often-expensive restoration and maintenance of their natural dentition. However, our obligation should not end when the client becomes medically impaired, physically disabled, or cognitively impaired and experiences difficulty

accessing dental care. Too often we assume that clients can or will come to us. We need to go to them.

Traditionally, the health care of homebound individuals has been coordinated by the medical field and dentistry falls outside of its sphere of control. There may be various reasons why dentistry is excluded from the planning of overall health care. Physicians, nurses, government, and elders may feel that dentistry is a luxury and not an essential part of general health. Some individuals may believe that, because they wear dentures, they do not need dental care. However, oral health professionals have a specific role to play because they can help improve the quality of life for the elderly by keeping them free from pain and oral infection, by restoring and maintaining their dentition so they can have adequate nutrition and enjoy eating, and by preserving esthetics.²⁰

This study required ongoing communication between the community health nurses (Continuing Care Case Managers) and the dental hygienist/examiner. It is possible that, through this type of communication, the complementary nature of oral health and general health care can become more apparent. In this way, dental and medical personnel will be better equipped to understand and meet the needs of the homebound elderly. Dental professionals need to seek integration into health care teams that care for the elderly and to extend their services to clients who experience barriers to traditional access to oral care. Screening for oral health problems by dental hygienists—similar to the assessments carried out in this study—may be a cost-effective method of promoting better oral health for this population. Dental hygienists could also act as advocates for the older individual by facilitating dental care. Additionally, in-service education sessions can be coordinated by dental hygienists and presented to home support workers and Continuing Care Case Managers. These sessions have the potential to positively influence the quality of life and comfort for the functionally dependent elderly by ensuring that all interprofessional team members involved in care are knowledgeable about oral health and its important relationship to general health and well-being.

The community health nurses who referred clients for this study were very receptive to improving the oral health status of this group of elderly individuals and the elderly participants assessed were very appreciative. One participant mentioned that at-home oral assessments for the homebound would be a good ongoing service and could perhaps have saved her elderly homebound neighbour who recently died of advanced oral cancer. The oral health professions have important roles to play in ensuring the overall health and well-being of the functionally dependent, community-dwelling elderly population.

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LETTERS TO THE EDITOR

March 26, 2001

Salme Lavigne, Dip. DH, BA, MS

Associate Professor and Director, School of Dental Hygiene
Faculty of Dentistry, University of Manitoba
Winnipeg, Manitoba

Dear Ms. Lavigne,

With reference to your article that appeared in the *Probe Scientific Journal*, November/December 2000, Vol. 34, no. 6: The article "Not All Trays Are Created Equal: An Analysis of Fluoride Tray Fit" contains statements that are of concern to me.

In your introduction, you referred to information from the article "Review of the Anticaries Effectiveness of Professionally Applied and Self-applied Topical Fluoride Gels" authored by Louis W. Ripa, DDS, MS. After reviewing this article, I found no mention of the US FDA having approved these agents for twice annual applications.

In the "Methods and Materials" section:

Your analysis was only done with large size trays. What was the reason for selecting this size tray?

You state, "The typodonts were held in position to assure that the angle used to photograph the various brands of applicator trays would be comparable and not favour one brand over another." There is no way you can prove the finger pressure used in the photographs is exactly the same with each tray demonstrated. It is obvious that the pressure applied in the Oral-B dual arch tray is greater than the pressure applied to the other manufacturers' trays.

In all comparisons, figures, and lists, Oral-B is always the first tray mentioned. This is favoritism! According to professional journal writing standards, comparison of products should be done in alphabetical order to avoid any form of partiality.

You give four categories of criteria, which were developed to

evaluate the fit of each tray on the typodont. What was the basis for measurement used to establish these outcomes? How were the criteria for excellent, good, fair, poor or none established? In addition, how did you establish percentage results? How can you rate patient comfort/acceptance and have a conclusive outcome when people were not used for this evaluation? I would have to assume your conclusions were purely subjective, non-scientific and visual analysis. In your words, you recognize that these criteria are insignificant in this in-vitro study. This diminishes the entire scientific concept of this article and reduces it to an advertisement.

It is ludicrous to do a study and to improperly compare devices. Oral-B does not have the interlocking handle that Butler, Schein, Sultan, and Quala trays feature. This type of handle makes for easier insertion and removal of the tray. The interlocking handle design also creates correct anatomical contour. Why did you neglect to use the feature that Oral-B lacks?

You repeatedly mention Funtrays, Centrays, and Centwins in your article. Of course you know that these are all trade names for Oral-B. Why is it that you fail to mention all the trade names of the other company trays? This further reinforces my thoughts that this is an advertisement disguised as a scientific study.

I do not understand what your conclusion has to do with anything you wrote in the article Conclusions in a scientific article are the outcomes obtained from data received and evaluated.

I am a Registered Dental Hygienist, hold a clinical faculty position at the University of Medicine and Dentistry - School of Health Related Professions and a member of the Editorial Review Boards for RDH Magazine and Journal of Practical Dental Hygiene. I am appalled that the reviewer/s of this article allowed it to be published. ...

Sincerely,

Ellen R. Fein, RDH

Public Relations Manager/Director of Clinical Education
Sultan Dental Products, Englewood, New Jersey 07631

"LES TROIS DÉFIS DE LA NOUVELLE PRÉSIDENTE"
(suite de la page 203)

L'adhésion à votre association provinciale constitue un investissement dans votre capital social, c'est-à-dire les liens qui nous unissent. Il s'agit de construire un réseau auquel vous pouvez accéder pour trouver de l'aide ou des réponses à de nombreuses questions dont, notamment, la sensibilisation du public, l'autogestion, la transférabilité, l'accessibilité pour les consommateurs aux soins de santé dentaire ainsi que les occasions d'études supérieures et de recherche pour et par les hygiénistes dentaires.

Je vais m'efforcer de faire en sorte que l'ACHD soit perçue comme un organisme convivial. J'aimerais vous voir, les membres de l'ACHD, vous en servir comme d'un élément essentiel de la profession de l'hygiène dentaire. L'ACHD dispose d'un personnel restreint mais très dévoué, qui fonctionne dans le cadre de dix systèmes provinciaux, des deux langues officielles et de six fuseaux horaires. Nous devons faire place aux particularités provinciales dans la

profession : une variété de programmes d'enseignement, de champs de pratique et de régimes de gouvernance. Toutes ces particularités ont un effet sur l'hygiène dentaire dans l'ensemble du pays.

Les membres du conseil d'administration ont assisté à la conférence de l'ACHD, à Mississauga, en septembre, donnant ainsi un visage et une voix à votre conseil. J'espère que vous avez partagé avec elles vos problèmes et vos préoccupations, lors des différentes séances allant du panel sur l'éducation au niveau du baccalauréat jusqu'au forum civique. Je vous encourage à partager ainsi, en tout temps, sur tout enjeu qui vous préoccupe. L'ACHD a besoin de votre participation et de votre appui pour établir des priorités et des politiques qui vont refléter la voix et la vision collectives de l'hygiène dentaire au Canada. On fera ainsi avancer la profession comme outil de soutien pour vous, ses membres, et pour contribuer à la santé et au bien-être du public. C'est là notre passionnant défi. Au plaisir d'avoir de vos nouvelles. 

May 9, 2001

Ellen R. Fein, RDH

Public Relations Manager/Director of Clinical Education
Sultan Dental Products, Englewood, New Jersey

Dear Ms. Fein,

When I read your letter, I was quite taken aback by your tone and accusations. ... As current President of the Canadian Dental Hygienists Association and as a well-respected North American Dental Hygiene Educator and researcher, I will refrain from responding in kind.

Your primary concerns appear to be twofold: 1) the test methodology; and 2) perception of favouritism of Oral-B brands vs. the others. I will address each of these concerns separately.

Test methodology

Why were large size trays used? The size and type of the typodont dictated the tray size to be used. An important part of the study involved the use of a periodontally involved adult mouth model (Nissin P2D-001) representing adults with recessions. This study did not consider smaller sizes of trays. ...

Potential for varying amounts of finger pressure that could feasibly alter the extent of vertical tooth coverage. Rather than using a constant, measurable amount of pressure to "seat" the tray completely, finger pressure was applied until the tray trough firmly touched the typodont teeth. ...

Basis used for measuring various criteria. I very clearly state in the last sentence of the introduction section that the purpose of the study is to do a *visual* comparison of the fit of various brands of fluoride trays. This was never intended to be an empirical randomized controlled clinical trial. Rather, its intent was to be a descriptive study of my visual findings based on my professional judgement. It is clearly a Level III study as far as ranking in evidence-based literature. However, studies of all ranks are important, whether they be empirical, in-vivo, in-vitro, descriptive or even case studies, and often lead to further studies of higher order. In any in-vitro study, the researcher would not be prudent if they didn't indicate that further in-vivo studies would be required to substantiate the in-vitro findings as results of in-vitro studies are never generalizable to human subjects. That does not, however, preclude that they aren't valid results! You also mentioned that I admitted in the study that the criteria are insignificant in this in-vitro study. This is not what I said. I wrote "*In the category of patient comfort/acceptance criteria, it is recognized that these criteria are not as significant in this in-vitro study but would be extremely important to patients in the clinical setting.*"

It is straightforward "visual analysis" plus my understanding as a dental professional and educator of what characteristics are important in judging the efficacy of an applicator tray that formed the basis of my criteria. Since professional judgement does enter this analysis, there will always be room for differing opinions. However, in speaking with many professionals since the article has been published, I have found that the vast majority consider my analysis to be rational and helpful in the selection of tray brands. The percentage results provided in the body of the article are strictly mathematical formulations based on the total number of excellent, good, fair, and poor responses applied to the criteria for each tray. For example: under the dual arch design comparison (Table 2), there were a total of 18 criteria of which Sultan trays received only 1 "excellent" rating (or 6%) and only 6 "good" ratings (or 34%). I can understand that as a Sultan employee, you are concerned that your brand performed this poorly, especially considering the 89% "excellent" and 100% "excellent" or "good" ratings earned by Oral-B trays. I assure you that my ratings were done in a totally unbiased manner and the results are clearly evident in the photographs.

Evaluation of patient comfort and acceptance based on visual analysis. This is an understandable question. I actually debated whether to include this category of criteria since it was an in-vitro study. However, as I felt the edges of the trays, I noticed a considerable difference in roundness/sharpness, which I felt I could evaluate through manual palpation. Furthermore, the other three criteria in this category—sturdiness/stability, non-protruding hinge design, and visual acceptance—were categories that I could assess visually so I decided to include them. As you are no doubt aware, dental practice abounds with individual perceptions about products and techniques. Some of these perceptions are as important, or even more important, than any strict scientific evaluation that can be devised. I have done my best to evaluate this area based on physical characteristics of the various tray brands.

I firmly believe that patient comfort is an integral part of a thorough analysis comparing applicator tray brands. I regret that you believe that "patient comfort" section diminishes the scientific nature of the article "and reduces it to an advertisement." That certainly is not the feedback that I have received from colleagues whom I deeply respect. However, if we were to eliminate the "patient comfort" criteria from the dual arch comparison, we would be left with a Sultan "excellent or good" rating of 36% vs. 40% rating with "patient comfort" included.

Non-use of interlocking Sultan handle. I do not understand your concern. This is the ONLY criteria which Sultan achieved an "excellent" rating! However, I strongly disagree that the interlocking device "creates anatomical contour." In my opinion, the Sultan tray, with or without the interlocking tab in place, does not improve the arch "fit." I have also heard from colleagues that closing the tab during use can be problematic in conjunction with the use of suction devices.

Accusation of favoritism

Your objection to my placement of the Oral-B name first, rather than the use of an alphabetized sequence, would appear to be inconsequential. I am not aware of any adopted writing standard requiring such a format. I refer you to a publication (RDH Magazine) that has you listed as a member of their editorial review board. The December 2000 issue of RDH on page 33 contains two separate product listings. In neither table do they employ an alphabetized listing. I had no particular reason for listing Oral-B first other than perhaps their performance results.

As far as the use of several Oral-B brand names, they include these names (Centrays, Centwins, Funtrays) on the packages that I purchased from dental dealers. The Sultan Topex branding was abbreviated because your product was identical to the Schein and Quala designs in Canada. This grouping was to make it easier for the reader to identify with the brands they were using.

Concerning my conclusion, I believe I have summarized the outcomes of the study in the first paragraph as required of any scientific conclusion. However, author interpretation and significance of the study results are also a required part of the conclusion, which I believe is addressed in the second paragraph.

Finally, rather than attempting to discredit the validity of my study results, why not use the results to help influence changes in the quality of the product that your company is providing to dental professionals. I cannot believe that the provision of a higher quality tray would significantly reduce your corporate profits. I trust that you share my interest in providing the highest quality fluoride treatments to patients.

Sincerely,

Prof. Salme Lavigne, RDH, MS(DH)

Associate Professor and Director, School of Dental Hygiene,
Faculty Dentistry, University of Manitoba

Cc: Marilyn Goulding, Editor, *Probe Scientific Journal*

It's Nice to Feel Wanted!



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**Association of
Dental Surgeons of
British Columbia**

#400-1765 West 8th Ave.,
Vancouver, BC V6J 5C6

Tel: 1-604-736-7202

Editor's comment:— In response to Ms. Fein's letter, I have a few comments and/or clarifications. The review process for the scientific issues of *Probe* is standard for (or similar to) many of the biomedical journals in publication. After pre-view by the scientific editor, the papers are sent anonymously to two members of the review board chosen as best suited to the topic area. Such was the case with Ms. Lavigne's paper. All members of the review board are accomplished dental hygienist educators, researchers, and authors in their own right.

Although I commend Ms. Lavigne for addressing each concern spelled out by Ms. Fein, I found several to be unworthy of reply in that the criticism/statement was not founded on acceptable research design criteria.

In the letter, see the statement in "Methods and Materials" under point (2): "there is no way you can prove finger pressure is exactly the same with each tray." Since the purpose of this study was stated "to visually compare the design and fit," there was no need to measure pressure. The author clearly indicates that the trays were merely "held in position" in order to photograph the typodont from a standardized position to avoid favouring one brand over another. There was no intent to measure mastication force.

Ms. Fein also states "it is obvious that the pressure applied in the Oral-B dual arch tray is greater." She does not indicate how it is "obvious." This editor sees no indication of anything considered obvious and no such concerns were voiced by the reviewers.

Ms. Fein also states concern that Oral-B was listed first in all tables. It appears that Ms. Lavigne has conveniently listed the results as best to worst. This is a common ordering hierarchy for much comparative literature and is not, in our opinion, in order to show favouritism but rather to clarify reader assessment.

As for the categories of criteria used to evaluate the trays, it is the researcher's prerogative to develop an index when no existing index is available in the literature. As long as the investigator evaluates all subjects/specimens by the same criteria, this is an acceptable and valid evaluation. Ms. Lavigne uses "anatomical fit" to a standard large-sized typodont; evaluates "efficacy," which relates to actual tooth coverage and closeness of fit; and examines "ease of use" as related to extra features that make the trays' selection and use desirable by the clinician. The "patient comfort" index could have been more appropriately termed "potential patient comfort" as this study was in vitro. However, the author's oversight in this point does not make her evaluation "purely subjective and non-scientific." Obviously our reviewers could clearly see the openly stated design and were not confused by the title for this index.

Ms. Fein declares it is "ludicrous to ... improperly compare devices." This editor and our reviewers did not see any of the devices improperly compared; rather, they appeared to be precisely compared. Photographs also clearly show that the interlocking handles were used in the comparisons (see Figure 8).

Ms. Fein is also concerned that not all trade names are mentioned. Any researcher has the prerogative to include a selection of subjects/specimens. Ms. Lavigne did not compare all trays on the market, merely an acceptable sample of the most commonly used designs. This is completely acceptable by our review board and likely by many other review boards as well.

I do not agree with Ms. Fein's definition of Conclusions as "the outcomes of data." I believe this is the definition of Results. Ms. Lavigne's concluding paragraph makes statements "without speculation and derived directly from the results," which is the requirement outlined in our Guidelines for Authors. She indicates that the "visual survey ... clearly demonstrates how differently various brands ... adapt to tooth surfaces ... on a typodont." She also indicates that further in vivo studies are needed and finishes with the summary that Oral-B derived the highest ratings in the majority of categories. These statements are a direct reflection of the results.

I receive many letters from interested readers of *Probe*. In this instance, I felt that the criticism was directed not only at the study in question but also at the journal and its review board. The people who contribute to *Probe* all have résumés surpassing that outlined in Ms. Fein's letter. I submit this overview in their defence.

Marilyn Goulding, RDH, BSc, MOS

Scientific Editor, *Probe*

GUIDELINES FOR AUTHORS

MISSION STATEMENT

The mission of *Probe* (scientific issues) is to provide a forum for the dissemination of dental hygiene research to enrich the body of knowledge within the profession. Further, the intent is to increase interest in, and awareness of, research within the dental hygiene community.

POLICY STATEMENT

Probe (scientific issues) invites manuscripts relevant to dental hygiene research including theory development, education, and practice. Preference is given to manuscripts that address current issues, make a significant contribution to the body of knowledge of dental hygiene, and advance the scientific basis of practice.

A manuscript submitted to *Probe* (scientific issues) for consideration should not have been submitted or published elsewhere in any written or electronic form, nor should it be currently under review by another body. This does not include abstracts prepared and presented in conjunction with a scientific meeting and subsequently published in the proceedings.

Manuscripts reporting empirical studies should provide comprehensive descriptions of the research design and methods. The results and conclusions should be clear and supported by valid and reliable data. Manuscripts developing theory or discussing epidemiological or methodological issues should be appropriately illustrated and documented.

INITIAL MANUSCRIPT SUBMISSION

Each initial submission must include 4 hard copies of the manuscript, double-spaced, single-sided, with title page, key words, abstract, text, acknowledgments, references, tables, figures, and illustrations (with legends), each beginning on a new page.

Submissions must include electronic files in WordPerfect or Microsoft Word format. PC files and PC diskettes or zip disks are preferred, but the CDHA will also accept Mac versions. Please indicate the software version and platform on all disks.

Under certain circumstances, upon confirmation with the CDHA, PageMaker or QuarkXPress files can be accepted.

Electronic files should be as free of formatting as possible (i.e., no tabs, indents, and codes).

The exceptions to this are

- italicized items, such as the species of an organism
- accepted Latin terminology and abbreviations
- indented reference sections

Illustrations, charts, diagrams, and photographs should be inserted at appropriate locations within the hard copy of the

manuscripts supplied. Clean copies of all illustrations, charts, and diagrams should be provided on separate 8 1/2" x 11" sheets. Illustrations, charts, and diagrams created in electronic formats must be provided in the following manner:

- a copy of the original file in the original program on a disk
- where possible, also saved as a *.TIF or *.EPS version (and named accordingly) on a disk
- as a hard copy printout

Photographs should be provided as unmounted glossy prints (5" x 7" or 8" x 10" preferred), slides, or electronic files (minimum 600 dpi), or preferably both. All illustrations, charts, diagrams, and photos should be in a separate envelope, reinforced with cardboard, within the mailing pouch. Each item must be clearly labelled on the back with the authors' abbreviated captions and numbers according to the citations within the text, and the corresponding manuscript page numbers. Information should be printed on a label affixed to the back of the image; do not write directly on the back of photographs or images.

Each manuscript must be accompanied by a cover letter stating that the research is original, not under consideration elsewhere, and was conducted according to ethical standards of the *Tri-Council Policy Statement for Ethical Conduct for Research Involving Humans 1998*. The letter must be signed by the first author and include this correspondent's mailing address, telephone, fax, and/or e-mail address.

The correspondent should also include a self-addressed, stamped postcard with the following typed on it: "The manuscript entitled _____ (title) _____ has been received by the editor on _____. Upon receipt of the manuscript, this card will be dated and returned to the author.

MANUSCRIPT CONTENT AND COMPONENTS

Authors should use a direct and straightforward writing style. Comprehension is increased with clear writing and a logical progression of ideas within each sentence, each paragraph, and ultimately throughout the manuscript. State the paper's purpose and thesis at the beginning, and follow with background, dates, discussion, and conclusions. Good writing is clear, concise, and free of acronyms and jargon.

Title page

The title must be concise but informative. It should be followed by each author's name (first name, middle initial, and last name) with respective degrees and any institutional affiliation. All authors should have participated sufficiently in the work

to be accountable for its contents. Any co-authors should initial manuscripts beside their name to indicate that they have reviewed and approve the contents.

Abstract

The abstract should be no longer than one typewritten page (approximately 250 words) and should not contain references or section headings. A typical format is outlined below.

Components for empirical studies, in order

- background: description of the problem being addressed and why
- methods: description of how the study was performed
- results: the primary statistical report
- conclusion: what the authors have derived from these results

Components for reviews, in order

- objective: including the subject or procedure reviewed
- method: description of the review methodology (e.g., metaanalysis)
- summary: synopsis of the conclusion and/or results
- or
- clinical condition: description of the clinical quandary
- treatment choices and comparisons
- results: expected clinical outcomes given the options reviewed

A maximum of 6 key words or short phrases should also be provided for indexing purposes. Terms from the Medical Subject Headings (MeSH) list of *Index Medicus* are preferred.

Text

Text should be in a 12-point font, serif (i.e., Times) or sans serif (i.e., Arial, Helvetica). Script typefaces should be avoided. All text and titles should be in upper and lower case, not in CAPS. Paragraphs should be separated by one-line return and should not be indented. The text must be divided into sections as shown below. Subheadings are acceptable.

1. Introduction

This section contains a concise background and rationale for the article. All work reported in this section must have been completed and published and cannot include data and/or findings from the paper being presented.

2. Materials and methods

Readers should be able to reproduce the study from the report in this section. List the methods and materials (stating manufacturer's name and location; city/state/province/country) used in the study. Research populations must be calculated and identified. Study design must be clear

and appropriate controls seen to be in place. Human review and appropriate consent must be stated and in accordance with the *Tri-Council Policy Statement for Ethical Conduct for Research Involving Humans* 1998. Any animal studies must be in accordance with national law on the care and use of laboratory animals and should state the institution's review requirement.

3. Results

Results should be presented in a logical sequence as befits the methods used and must reference tables, figures, and illustrations. Details about randomization, eligibility, and/or loss of subjects should be included. All tabular data should report either standard deviation values or standard errors of the means, probability values, and the names of any statistical tests.

4. Discussion

In this section, the authors explain and interpret their work in light of the previously published work outlined in the Introduction. Authors may highlight the advances as well as discuss the limitations of their work. Implications for future work should be discussed. Subjectivity is acceptable in this section if it is directly linked to the content of the paper and has a scientifically credible background.

5. Conclusions

Conclusions must be drawn from the body of original work and not in light of work referred to within the discussion section. Statements made must be derived directly from the results and not be speculative.

6. Acknowledgments

Here recognition is given to individuals who provided assistance or support to the work. The author must retain written permission from any and all persons identified in this section for citing their names, as to do so may imply endorsement of the data and/or conclusions. All funding sources must be identified in this section.

7. References

References should be numbered consecutively in the order in which they are first mentioned in the text. Using superscript arabic numerals, identify references in text at the end of the sentence in which they appear. If a sentence contains two references, a comma is inserted between them; if multiple sequential references, an en-dash is inserted between the first and last reference number (e.g., 1,2 or 3-6).

The reference style chosen is based on the *Index Medicus*.

Journal

Orban, B., Manella, V.B.: A macroscopic and microscopic study of instruments designed for root planing. *J Periodontal* 27: pp. 120-135, 1956

Volume with supplement

Orban, B., Manella, V.B.: A macroscopic and microscopic study of instruments designed for root planing. *J Periodontal* 27 (Suppl. 5): pp. 120-135, 1956

Conference proceedings – presentation or paper

Calder, B.L., Sawatzky, J.: A team approach: providing off-campus baccalaureate programs for nurses. In: Proceedings of the Ninth Annual Conference on Distance Teaching and Learning. Aug 4-6, 1993, Madison, WI. [place of publication]: [name of publisher], pp. 23-26, 1993

Conference proceedings – abstract

Austin, C., Hamilton, J.C., Austin, T.L.: Factors affecting the efficacy of air abrasion [abstract]. In: Abstracts of papers, 30th Annual Meeting of the AADR and 25th Annual Meeting of the CADR. Mar 7-10, 2001, Chicago, IL. *J Dent Res* 80 Special Issue (AADR Abstracts) (January): p. 37, Abstract nr 015, January 2001

Book

Cairns, J. Jr., Niederlehner, B.R., Orvism, D.R., eds.: Predicting ecosystem risk. Princeton, NJ: Princeton Scientific Publications, pp. 560-562, 1992

Article in book

Weinstein, L., Swartz, M.N.: Pathological properties of invading organisms. In: Soderman, W.A. Jr., Soderman, W.A., eds. Pathological physiology: mechanisms of disease. Philadelphia: WB Saunders, pp. 457-472, 1974

Organization as author

Canadian Dental Hygienists Association: Policy framework for dental hygiene education in Canada. *Probe* 32: pp. 105-107, 1998

No author

What is your role in the profession? [editorial] *J Dent Topics* 43: pp. 16-17, 1999

Personal communication

Skelton, M.: Conversation with author. Oak Park, ILL: July 14, 1990

Newspaper article

Rensberger, B., Specter, B.: CFCs may be destroyed by natural process. *Globe and Mail*, Sect. B, p. 24, Aug. 7, 1989

Audiovisual

Wood, R.M., ed.: New horizons in esthetic dentistry [videocassette]. Visualeyes Productions, producer. Chicago: Chicago Dental Society, 2 videocassettes, 1989. Available from Great Plains National Instructional Television Library, Lincoln, NE

Computer program

National Library of Medicine: GRATEFUL MED [computer program]. Version 5.0. Bethesda, MD: NLM, 1990

Internet

National Library of Canada: Citing electronic sources: a bibliography [on-line]. Revised March 31, 1998. [Cited May 26, 1999.] Also available in French. <www.nlc-bnc.ca/services/eciting.htm>

■ PUBLICATION PROCESS

The scientific issues of *Probe* are peer-reviewed journals. Each manuscript will be reviewed by the editor and two members of the advisory group as well as the statistical consultant. The author will then receive all comments (written directly on the copies) and a cover letter summarizing any resubmission requirements. Every attempt will be made to return the first round of comments within 6 weeks.

Authors should make the appropriate changes by referring to the editor's letter, reviewing each of the returned copies, and producing a final submission. If the author disagrees with any of the reviewers'/editor's comments or suggestions, he/she should continue to revise the manuscript and return it with the **unchanged** portion bracketed in indelible ink along with a cover letter explaining the unrevised sections. As the editor uses fax to communicate with the review committee, authors are requested not to highlight the text as this does not fax well and reduces readability.

Final electronic file submission

When the final manuscript has been accepted for submission, electronic files incorporating all recommended revisions from the peer reviewers should be forwarded to CDHA, along with 4 hard copy printouts of all the files. Electronic files should be saved in WordPerfect, Microsoft Word, QuarkXPress, or PageMaker format on clearly labelled PC or Mac Diskettes or zip disks.

Authors are referred to the "Initial Manuscript Submission" guidelines, outlined earlier, for information about submitting final materials for publication.

Final editorial approval and copyright release

The revised copies will be sent to the original reviewers for verification of content revision. The reviewers have 10 days to reply to the editor who will then inform the author that the paper has been accepted and that the copyright form must be signed and returned. Upon submission, each author provisionally relinquishes copyright and is required to sign and return the copyright release form that is included in the letter of acceptance from the editor. All manuscripts accepted become the property of *Probe* and cannot be submitted elsewhere unless they are returned to the author unpublished within 12 to 16 months.

The paper will then be forwarded to the managing editor who will put it into the printing process. Scientific issues of *Probe* are published twice a year; papers are published in order of acceptance. 

ABSTRACTS FROM IADR'S JOURNAL OF DENTAL RESEARCH

We are fortunate to be able to provide more abstracts from the International Association of Dental Research (IADR)'s *Journal of Dental Research*, Volume 80, Issue 1, dealing with oral care of the elderly. These abstracts are selected from those presented at the March 2001 conference of the American branch of the IADR, the American Association for Dental Research (AADR).

ELDERS

SUBJECTIVE ORAL HEALTH STATUS INDICATORS ASKED BY DENTISTS DURING INITIAL EXAMINATIONS OF OLDER ADULT PATIENTS.

R.J. HAWKINS, D. LOCKER (University of Toronto, Ontario, Canada).

The objective of this study was to assess the types of Subjective Oral Health Status Indicators (SOHSI) which dentists usually ask during initial examinations of older adult patients. A questionnaire was sent to a random sample of 1/3 of general dentists in Ontario, Canada. The survey form consisted of 11 questions selected from an older adult survey instrument, SOHSI. From this list dentists indicated the questions they usually asked during initial examinations. The adjusted response rate was 34.3% ($n = 672$). The mean number of SOHSI questions asked by dentists was 6.3 ($SD = 2.4$). The most commonly asked questions dealt with symptoms of pain (85-95%), and satisfaction with the appearance of teeth/dentures (88.1%). The least frequently asked questions concerned the social impact of oral health (e.g., do you avoid eating with other people because of problems with chewing?) (75-85%). In logistic regression, the factors significantly associated with dentists asking social impact questions were: dentist's age 50+; taking continuing education in geriatric dentistry; and having a higher percentage of patients aged 65+. The most common reasons for not asking SOHSI questions were: they assumed patients would tell them this information without being asked (61%); and they had not considered asking those types of questions (23%). These results indicate that, during initial examinations of older patients, many dentists do not obtain information about the influence of oral health problems on social functioning. Supported by the Dentistry Canada Fund. robert.hawkins@utoronto.ca

ELDERS

SALIVARY ANALYSIS AND CARIES RISK IN COMMUNITY DWELLING ELDERS.

B.J. HIRST, R.E. PERSSON, L.V. POWELL, H.A. K1YAK. (Univ. of Washington, Seattle, WA).

Background/Aim: Current interest in the relationship of multiple variables with dental diseases has allowed researchers to classify people as being more or less susceptible to periodontal disease, caries and eventual tooth loss. The purpose of this study was to examine the relationship between salivary and clinical characteristics in an older population. **Methods:** The sample consisted of 101 community dwelling elders, ages 60-75 (mean 67.9, sd 4.4) who are part of an ongoing clinical trial. The sample included 40% men, 24% ethnic minorities. None had received dental care two years prior to enrollment in the study and had a minimum of five teeth. Subjects provided stimulated saliva samples, which were tested for flow rate, buffering capacity and lactobacilli and *S. mutans* counts. Clinical data were obtained; number of teeth remaining, sound coronal and root surfaces (NSC and NSR), and decayed, missing or filled surfaces (DMFS). **Results:** Age was associated with both clinical and laboratory indicators of oral health: older subjects had fewer teeth ($r = -0.31$, $p < 0.002$) and fewer NSC ($r = -0.22$, $p < 0.03$). Older subjects also had higher levels of lactobacilli ($r = 0.20$, $p < 0.05$). Females exhibited lower flow levels ($t = 2.56$, $p < 0.01$) and lower buffering capacity ($t = 2.05$, $p < 0.04$). Laboratory and clinical values were related; salivary flow was correlated with DMFS ($r = -0.25$, $p < 0.01$) and NSC ($r = 0.36$, $p < 0.002$). Subjects with increased bacterial levels exhibited more decay and fewer teeth, with correlations between *S. mutans* counts and NSR values ($r = 0.20$, $p < 0.04$), and between lactobacilli and tooth counts ($r = -0.27$, $p < 0.007$). The results support the importance of salivary analysis in assessing caries risk in older adults, especially among those with fewer teeth. Supported by NIDCR Grant No. T35 DE07150 and ROI DE 12215.

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CANCER

HUMAN PAPILLOMAVIRUS IN ORAL CANCER LYMPH NODE METASTASES.

K.F. SUMMERSGILL*, E.M. SMITH, L.P. TUREK, T.H. HAUGEN. (Veterans Affairs Medical Center and University of Iowa, Iowa City, Iowa).

Oral cancer is strongly associated with chronic tobacco and alcohol use, but not all chronic smokers and drinkers get oral cancer. An additional risk receiving increased support is infection with mucosal oncogenic human papillomavirus (HPV) types. The aim of this research was to determine whether HPV found in primary oral cancers was also found in their lymph node metastases. DNA from 48 formalin-fixed, paraffin-embedded oral cancers and their lymph node metastases was amplified by polymerase chain reaction using the MY09/MY 11 HPV L1 consensus primers, and the results were sequenced. Squamous cell carcinoma accounted for 47 of the cancers, and one was a mucocpidermoid carcinoma. Each lymph node metastasis was of the same tumor type and grade as the primary tumor. In 36 of the cases, both the tumor and lymph node were HPV-negative. Ten cases were HPV-positive, with the same type in both tumor and node. Oncogenic types identified in tumor/node pairs were HPV16 (eight, including one with a sequence variant in the tumor/node pair), HPV-18 (one) and HPV-33 (one). None of the non-oncogenic HPV types were identified in tumors or lymph nodes. Laser-assisted microdissection demonstrated that the HPV was in the cancer cells and not in surrounding normal tissue. One case was HPV-negative in the tumor and HPV-16 positive in the node, while another was HPV-16 positive in the tumor, but HPV-negative in the node. One of ten tumor-negative nodes from five HPV-positive cases was HPV-positive, indicating a micro-metastasis. This study shows that HPV infection is intrinsic to oral cancers, as evidenced by its presence in metastases. This suggests a causative role for HPV in oral cancer. This study was supported by a Veterans Affairs Dental Research Fellowship and NIH P20 15035 04. kurt.summersgill@uiowa.edu

PERIODONTOLOGY

BONE LOSS IN THE EDENTULOUS MANDIBLE AND MAXILLA.

M. DAGENAIS, M. VILLAFRANCA, E. KLEMETTI, J.S. FEINE (McGill University, Montreal, Canada).

Tooth loss is a major contributor to loss of bone in the jaws. Using multivariate regression analyses, we tested the hypotheses that 1) sex, age and years edentulous influence the amount of alveolar ridge height in the anterior maxilla and mandible; 2) sex, age and years edentulous influence the amount of alveolar ridge width in the anterior maxilla; and 3) sex, age and years edentulous influence alveolar ridge shape in the anterior maxilla.

Forty-four edentulous males and 51 edentulous females (mean age 46 years; range 29-63), who were screened for recruitment into an RCT, received panoramic radiographs and lateral cephalographs. Subjects had been edentulous in the mandible and maxilla for a mean of 23 and 24 years, respectively.

Significantly lesser amounts of mandibular residual bone were found in females ($p = 0.0001$) and in those who had been edentulous in the maxilla for a longer time ($p = 0.003$; $R^2 = 0.39$). Significantly lower maxillary bone height was associated with more years edentulous in the maxilla ($p = 0.004$). Furthermore, years edentulous in the maxilla was significantly associated with less maxillary bone width ($p's < 0.036$). No significant effects for age or sex were detected for the maxilla.

These findings are consistent with the hypothesis that the major determinant of bone loss in both the mandible and the maxilla is the time after the teeth are lost.

L'assurance contre les maladies graves

– Une protection en cas de vie

Vous avez travaillé ferme pour accéder au style de vie que vous souhaitiez. Faites en sorte de le conserver.

Certes, vous avez intérêt à souscrire une assurance-vie pour vous protéger, vous et votre famille, contre les conséquences financières d'un décès soudain. Mais ne devriez-vous pas envisager de vous protéger également contre les conséquences qu'une maladie grave pourrait avoir sur votre qualité de vie?

L'ACHD offre désormais à ses membres et à leur conjoint admissibles la possibilité de bénéficier d'une assurance contre les maladies graves. L'assurance garantit le **règlement en un seul versement d'un capital exempt d'impôt** si l'une des 18 maladies couvertes par le contrat (y compris l'infection par le VIH dans l'exercice de la profession) est diagnostiquée chez l'assuré et si celui-ci est en vie à l'expiration d'une période déterminée après que la maladie a été diagnostiquée. Le capital est versé, que vous vous rétablissiez ou non, et vous êtes libre de l'utiliser comme bon vous semble.

L'assurance contre les maladies graves est payée en plus de toute autre assurance que vous avez souscrite. Elle répond aux besoins que l'assurance-vie, l'assurance-invalidité et les régimes privés et publics d'assurance-maladie ne suffisent généralement pas à couvrir. Par suite du diagnostic de l'une des maladies couvertes par le contrat, le capital est versé, que l'assuré soit capable de travailler ou non et que la maladie lui occasionne des frais médicaux ou non.

Vous trouverez ci-après des exemples illustrant à quel point l'assurance contre les maladies graves est importante – non seulement parce que les gens décèdent – mais aussi parce qu'ils survivent!

EXEMPLE N° 1

Une hygiéniste dentaire âgée de 35 ans est mère de deux enfants de moins de cinq ans. Son mari occupe un emploi dans une entreprise. L'hygiéniste dentaire possède une assurance vie et invalidité bien adaptée à ses besoins.

L'hygiéniste dentaire apprend qu'elle est atteinte d'un cancer. Au moment du diagnostic, on lui indique qu'elle peut, soit attendre de pouvoir être soignée au Canada, soit recevoir des soins immédiatement en se rendant dans un centre de recherche et de traitement réputé situé à l'extérieur du pays. Toutefois, dans ce dernier cas, ces soins ne seraient pas couverts par son assurance maladie. De plus, l'hygiéniste aura besoin de fonds pour couvrir les frais de voyage et d'hébergement pour elle et son mari, les frais de traitement, d'hospitalisation et de médicaments, et les frais qu'elle devra payer pour faire garder les deux enfants. À cela s'ajoute le capital nécessaire pour rembourser en totalité ou en partie le prêt hypothécaire ou d'autres dettes. Si elle était couverte par l'assurance contre les maladies graves, elle toucherait en un seul versement un capital qui lui permettrait de régler tous ces frais.

EXEMPLE N° 2

Une hygiéniste dentaire célibataire âgée de 30 ans possède une assurance-invalidité bien adaptée à ses besoins, mais, toute sa famille vivant outre-mer, elle s'inquiète des frais qu'elle pourrait devoir engager en cas d'invalidité pour les services d'un préposé aux soins.

L'hygiéniste dentaire a un accident de voiture qui la laisse paralysée. Comme elle est célibataire et que ses proches vivent à l'étranger, elle aura besoin d'aide quand elle rentrera à la maison. Le capital payé en un versement au titre de l'assurance contre les maladies graves lui aurait permis de couvrir les frais exceptionnels non couverts par son assurance-invalidité, notamment les frais de soins donnés par une infirmière à titre privé, les frais de soins à domicile et le coût des travaux d'aménagement à effectuer pour adapter la maison à son état.

EXEMPLE N° 3

Une hygiéniste dentaire âgée de 45 ans est mère de deux adolescents. Son mari travaille à son compte à la maison dans le domaine de la consultation. Elle possède une assurance vie et une assurance invalidité bien adaptées à ses besoins. Son conjoint est couvert par une assurance-vie d'un capital suffisant, mais il ne réussit pas à obtenir une assurance invalidité.

L'hygiéniste dentaire est victime d'un accident vasculaire cérébral. Elle survit, mais elle demeure moyennement paralysée du côté gauche. Son assurance-invalidité lui assure un revenu suffisant pour couvrir les frais courants, mais elle ne suffira pas à couvrir bon nombre de frais particuliers. Si elle bénéficiait d'une assurance contre les maladies graves, le capital auquel elle aurait eu droit pourrait servir à payer, entre autres, l'installation d'une rampe d'accès pour fauteuil roulant ou un véhicule adapté, ce qui lui permettrait de continuer à conduire, ou encore il pourrait servir à rembourser une partie du prêt hypothécaire ou à payer l'entretien de la maison et les études universitaires des enfants. De plus, le conjoint de l'hygiéniste dentaire aurait aussi été admissible à l'assurance contre les maladies graves.

Au cours de sa vie, un Canadien sur trois contracte une maladie qui met sa santé en danger*. Grâce aux bons soins médicaux dont elles peuvent bénéficier, les personnes qui sont victimes de ces terribles maladies survivent souvent – non sans séquelles qui influent grandement sur leur style de vie et leur situation financière. En souscrivant une assurance contre les maladies graves, les membres de l'AHDC font en sorte de pouvoir prendre en main leur rétablissement sur le plan physique et financier et de préserver leur niveau de vie; c'est pour cette raison que nous avons pris des dispositions avec la Sun Life du Canada, compagnie d'assurance-vie pour offrir à nos membres (ainsi qu'à leur conjoint) la possibilité d'adhérer à un programme d'assurance contre les maladies graves.

Une maladie grave peut avoir pour effet de modifier considérablement votre style de vie et entraîner de graves problèmes financiers si vous n'êtes pas protégé comme il se doit. Préservez votre style de vie grâce à une assurance contre les maladies graves souscrite par l'entremise d'une association en laquelle vous avez confiance. Protégez également votre tranquillité d'esprit... votre qualité de vie... et les êtres qui vous sont chers.

Pour de plus amples renseignements sur le programme d'assurance contre les maladies graves de l'AHDC ou pour vous procurer une formule d'adhésion, veuillez communiquer avec la Sun Life du Canada, compagnie d'assurance-vie en composant sans frais le numéro **1 800 669-7921**.

* Institut national du cancer du Canada : statistiques de la Société canadienne du cancer.

Critical Illness Insurance – A Living Benefit

You've worked hard to create the lifestyle you deserve. Make sure you protect it.

Purchasing a life insurance policy to protect you and your family against the financial consequences of your untimely death makes sense. Shouldn't you also consider insuring your quality of life in the event of survival following a critical illness?

The CDHA now provides Critical Illness Insurance for its eligible members and their spouses. The plan provides a **lump sum** benefit upon diagnosis of one of 18 covered conditions, including Occupational HIV infection, subject to a survival period. You choose how to use the money and the benefit is paid whether or not you recover.

Critical Illness Insurance is paid in addition to any other insurance you may have and fills the gap where disability, life, and public and private health insurance plans often fall short. It pays regardless of your ability to continue working after diagnosis of a covered condition and whether your expenses are medically related or not.

The following examples underscore why Critical Illness Insurance is so important—not only because people die—but also because they live!

EXAMPLE 1

A dental hygienist, age 35, is married with two children under five years of age. Spouse is gainfully employed outside of the house. The dental hygienist is properly protected for life and disability insurance.

The dental hygienist is diagnosed with cancer and has been told that she can wait to receive treatment in Canada. Her other option is to go to a leading research and treatment centre outside the country to access treatment immediately, which is not covered by other insurance. With this treatment option, the dental hygienist would need funds for the following expenses: travel and lodging expenses for her and her spouse; treatment, hospitalization and medication expenses; child care for the two children as well as funds to help pay off part or all of the dental hygienist's mortgage or other debt obligations. If insured for Critical Illness Insurance coverage, the dental hygienist can use the lump sum payment to cover these expenses.

EXAMPLE 2

Single dental hygienist, age 30. The dental hygienist is properly protected for disability insurance but is concerned about additional health care attendant expenses as parents and siblings live overseas.

The dental hygienist is in a car accident that's left her paralyzed. Since the dental hygienist is single with relatives living overseas, she needs help when she gets home. With the lump sum payment under Critical Illness Insurance coverage, she can pay for the extraordinary expenses that may not be covered by disability insurance, including private nursing, home therapy, and modifications to the house.

EXAMPLE 3

Dental hygienist, age 45, married with two teenage children. Spouse runs a home-based consulting business. The dental hygienist is properly insured for disability and life insurance. Her spouse is properly insured for life insurance but is unable to secure disability insurance.

The dental hygienist has a stroke. She survives but remains moderately paralyzed on the left side. Her disability insurance will ensure income for everyday expenses but isn't sufficient to cover many of the extra expenses. If covered, a lump sum Critical Illness Insurance payment may be used to pay for the construction of a wheelchair ramp for her home, purchase a special vehicle that will allow her to continue driving, pay off a portion of her mortgage, pay for home care as well as provide funds for her children's university education. Also, with this plan the dental hygienist's spouse would be eligible to apply for Critical Illness Insurance.

It's a fact that one in three Canadians will contract a life-altering illness during his/her lifetime.* Good medical care often means individuals survive these catastrophic illnesses—but not without serious implications for their lifestyle and finances. With Critical Illness Insurance, CDHA members can take control of both their physical and financial recovery and maintain their standard of living. That's why CDHA has arranged, through Sun Life Assurance Company of Canada, for the availability of a Critical Illness Insurance plan for CDHA members and their spouses.

Living with a critical illness can mean major changes to your lifestyle and serious financial challenges if you are not prepared. Make sure you protect your lifestyle with a Critical Illness Insurance plan from an association you trust. Cover your lifestyle... Cover your peace of mind... Cover your quality of life... Cover your loved ones.

For more information on the CDHA's Critical Illness Insurance plan or to get an application, contact Sun Life Assurance Company of Canada toll free at **1 800 669-7921**.

* National Cancer Institute of Canada: Canadian Cancer Society Statistics

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BRITISH COLUMBIA

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SECHLT High-energy, family-oriented dental practice requires a full-time hygienist to join our caring and motivated hygiene team. Our office is located in Sechelt, BC, a beautiful oceanfront community on the Sunshine Coast. Please send résumé and references to: Attention Linda, Sechelt Dental Centre, P.O. Box 1099, Sechelt, BC V0N 3A0. Telephone (604) 885-3244; fax (604) 885-3787.

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VANCOUVER ISLAND Exemplary hygienists wanted. Need a job change? Unemployed? Frustrated? Join our elite placement force in Beautiful BC and find the perfect match to all your employer needs. Confidentiality is assured. It's easy, convenient, and free. Call Maggie at Dental Fill-Ins Personnel, (250) 753-1008. Serving Vancouver Island's dental professionals since 1997.

VERNON Full-time registered dental hygienist required for maternity leave of one year, beginning mid-January 2002. Possibility of permanent or part-time position after. Please submit résumé to Dr. Rex Hawthorne, 101 4005 27 Street, Vernon, BC V1T 4X9 or fax (250) 558-9917.

ALBERTA

BANFF Dental office is growing and we are looking for motivated, caring hygienists to join our dramatic team. Applicant must be a self-starter with previous experience and be committed to residing in the area. If you are looking for: F/T hours, above-average compensation, flexible vacation time, continuing education, wonderful patients in a beautiful area, supportive co-workers, and a fully computerized, up-to-date clinic to work in, please contact us. Fax résumé with cover letter to Dr. Jonathan Bagley at (403) 762-4959.

OLDS Modern family practice located in Olds, AB, requires a full-time RDH immediately. Please contact our clinic at (403) 556-6693 or fax résumé to (403) 556-6990.

MANITOBA

PINAWA We are looking for an easy-going, friendly full-time dental hygienist for a busy and recently expanded dental practice. Pinawa is a small, family-oriented recreational community alongside the Winnipeg River, just one hour northeast of Winnipeg. Please contact Pinawa Dental Clinic, P.O. Box 149, Pinawa, MB R0E 1L0. Telephone or fax: (204) 753-2787; e-mail: <young@mb.sympatico.ca>.

ONTARIO

HAMILTON Downtown Hamilton office requires part-time hygienist for maternity leave. May lead to permanent. Please fax résumé to (905) 529-2314.

RICHMOND HILL Part-time hygienist required for Wednesday and Saturdays, possibly other days. If interested, please fax résumé for an interview to (905) 883-9993.

PRINCE EDWARD ISLAND

SUMMERSIDE Full- or part-time dental hygienist required immediately for a busy family practice. We are a 3-dentist, 8-chair clinic with assistant support for our hygiene department. Please fax résumé to (902) 436-0331 or mail to Water Street Dental Clinic, 271 Water Street, Summerside, Prince Edward Island C1N 1B5.

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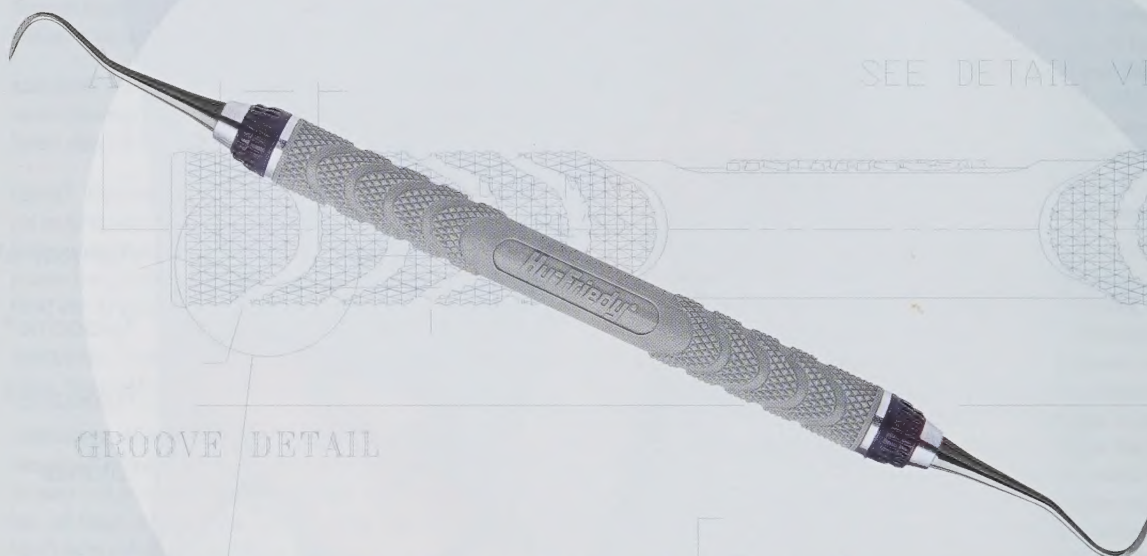
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